

# What makes people happy?

By Kaitlyn Zeichick

# Table of contents

**01** Data

**02** Topic Modeling and Exploration

**03** Conclusions and Next Steps

# Data



## Megagon Labs

- Their goal: a chatbot
- 100,000 MTurk responses
- Year of data collection: 2017

# TF-IDF NMF: Categories

**Topic 0:** friend, best, old, met, seen

**Topic 1:** work, early, project, raise, promotion

**Topic 2:** went, shopping, temple, walk, park

**Topic 3:** new, bought, purchased, phone, house

**Topic 4:** dinner, delicious, cooked, ate, pizza

**Topic 5:** home, came, visit, sister, house

**Topic 6:** game, video, played, won, playing

**Topic 7:** job, interview, received, getting, promotion

**Topic 8:** movie, watched, watching, watch, tv

**Topic 9:** birthday, party, celebrated, gift, surprise

**Topic 10:** family, member, going, vacation, easter

**Topic 11:** dog, walk, took, long, park

**Topic 12:** night, sleep, hour, morning, slept

**Topic 13:** wife, love, sex, baby, gave

**Topic 14:** favorite, lunch, ate, restaurant, food

**Topic 15:** daughter, school, old, told, baby

**Topic 16:** son, school, morning, gave, hug

**Topic 17:** girlfriend, going, date, long, met

**Topic 18:** husband, going, took, date, kid

# TF-IDF NMF: Categories

**Friends:** friend, best, old, met, seen

**Work:** work, early, project, raise, promotion

**Going Out:** went, shopping, temple, walk, park

**Buying Things:** new, bought, purchased, phone, house

**Dinner:** dinner, delicious, cooked, ate, pizza

**Someone Coming Home:** home, came, visit, sister, house

**Games:** game, video, played, won, playing

**Getting a job:** job, interview, received, getting, promotion

**Movies:** movie, watched, watching, watch, tv

**Birthdays:** birthday, party, celebrated, gift, surprise

**Family:** family, member, going, vacation, easter

**Pets and Walks:** dog, walk, took, long, park

**Sleep and Relaxation:** night, sleep, hour, morning, slept

**Wives:** wife, love, sex, baby, gave

**Lunch:** favorite, lunch, ate, restaurant, food

**Daughters:** daughter, school, old, told, baby

**Sons:** son, school, morning, gave, hug

**Girlfriends:** girlfriend, going, date, long, met

**Husbands:** husband, going, took, date, kid

# TF-IDF NMF: Categories

**Friends:** friend, best, old, met, seen

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**Wives:** wife, love, sex, baby, gave

**Lunch:** favorite, lunch, ate, restaurant, food

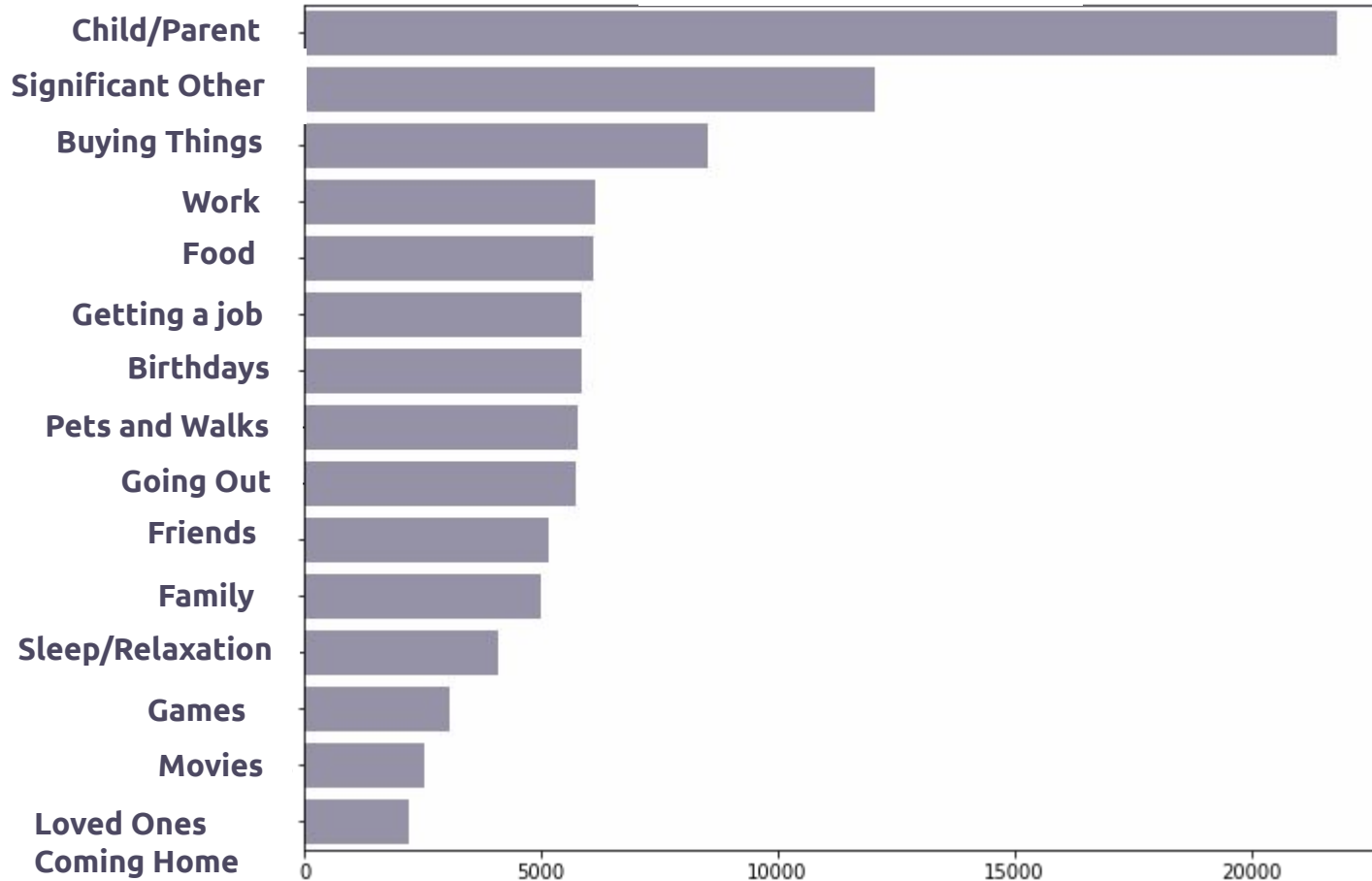
**Daughters:** daughter, school, old, told, baby

**Sons:** son, school, morning, gave, hug

**Girlfriends:** girlfriend, going, date, long, met

**Husbands:** husband, going, took, date, kid

## Final Categories



# Families

Explored how happiness differs by:

- Gender
  - Age
  - Marital Status
  - Country
  - Parent/Non-Parent
- 
- **How families influence one another's happiness**





# Families

How do parents make  
their children happy?



# Families

How do parents make  
their children happy?

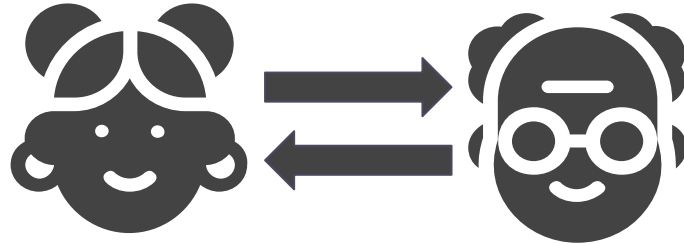


How do children make  
their parents happy?



# Families

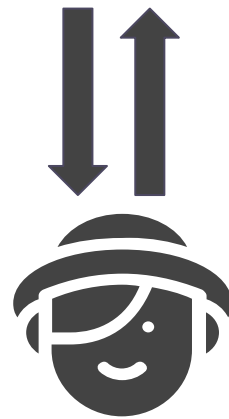
How do parents make their children happy?



How do children make their parents happy?

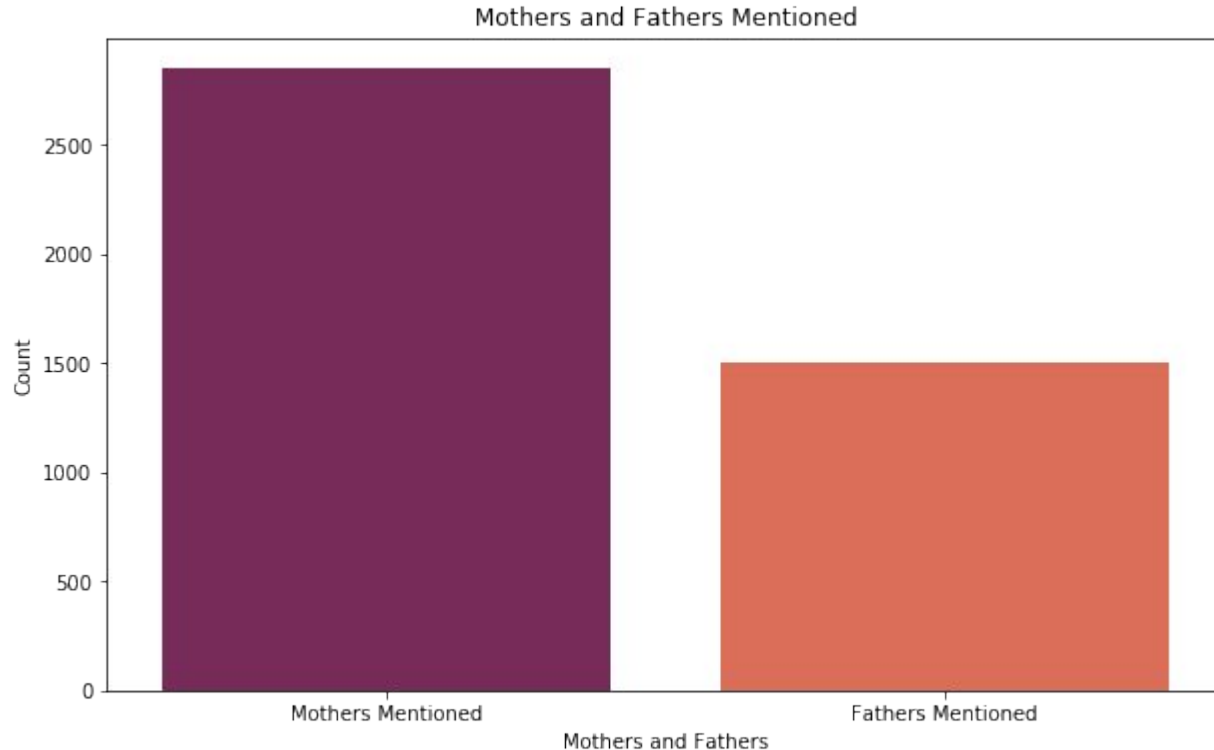


How do husbands and wives make one another happy?



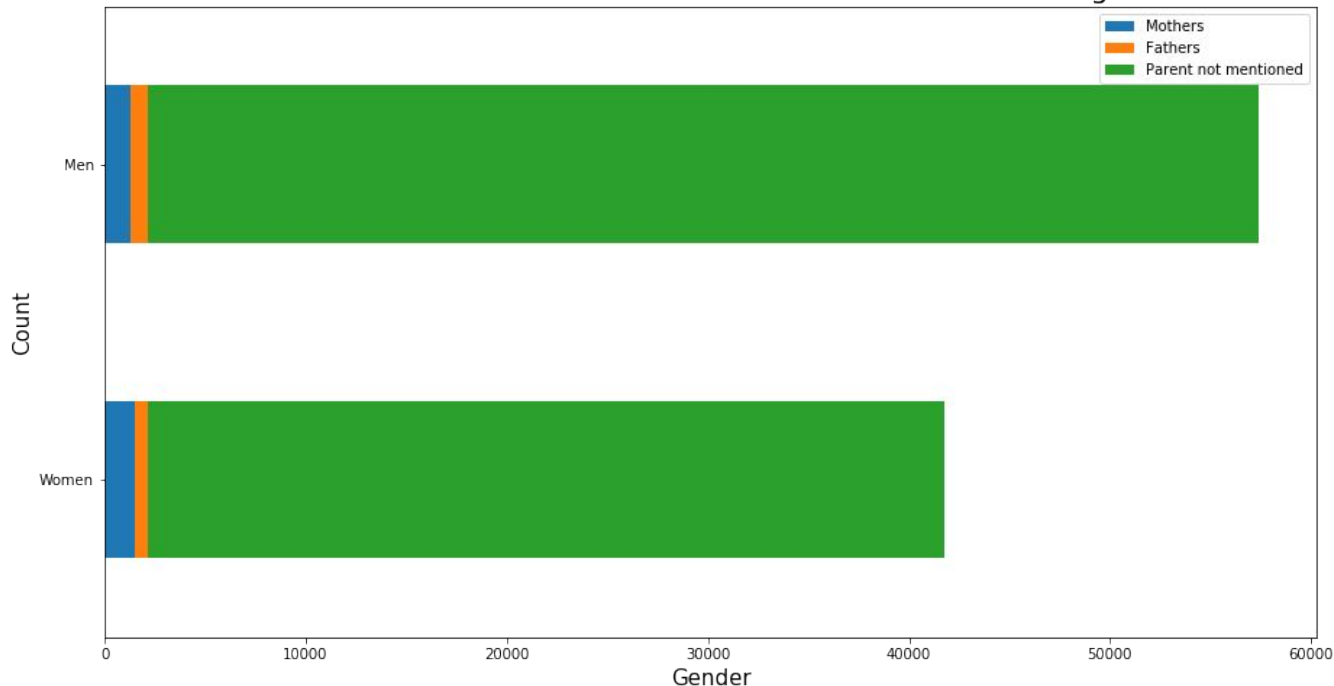
How do parents  
make their children  
happy?

# Source of happiness for children: Mothers more than Fathers

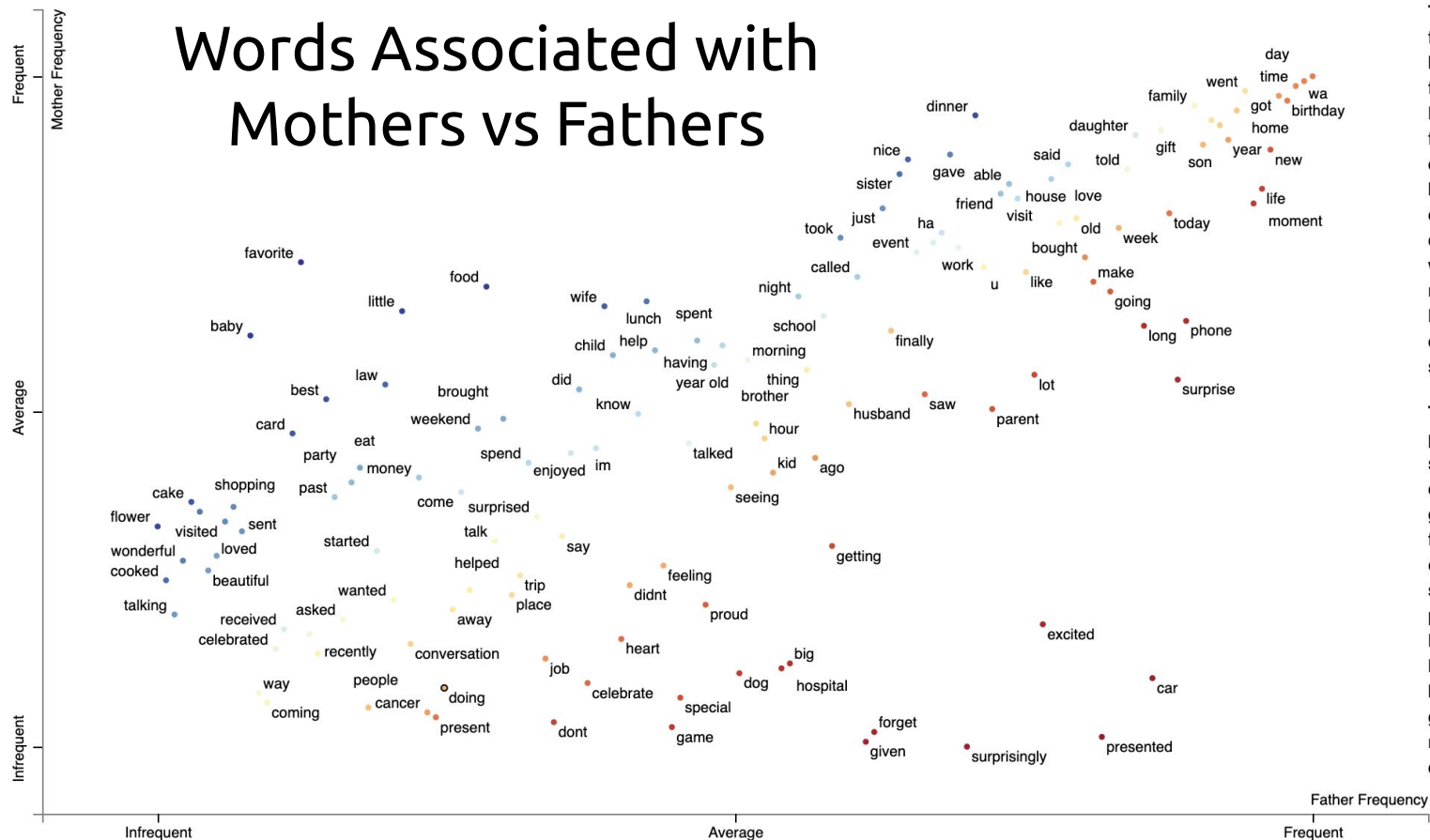


# Parents are a greater source of happiness for daughters than for sons

How often men and women mention their mothers and fathers when describing what made them happy.



# Words Associated with Mothers vs Fathers



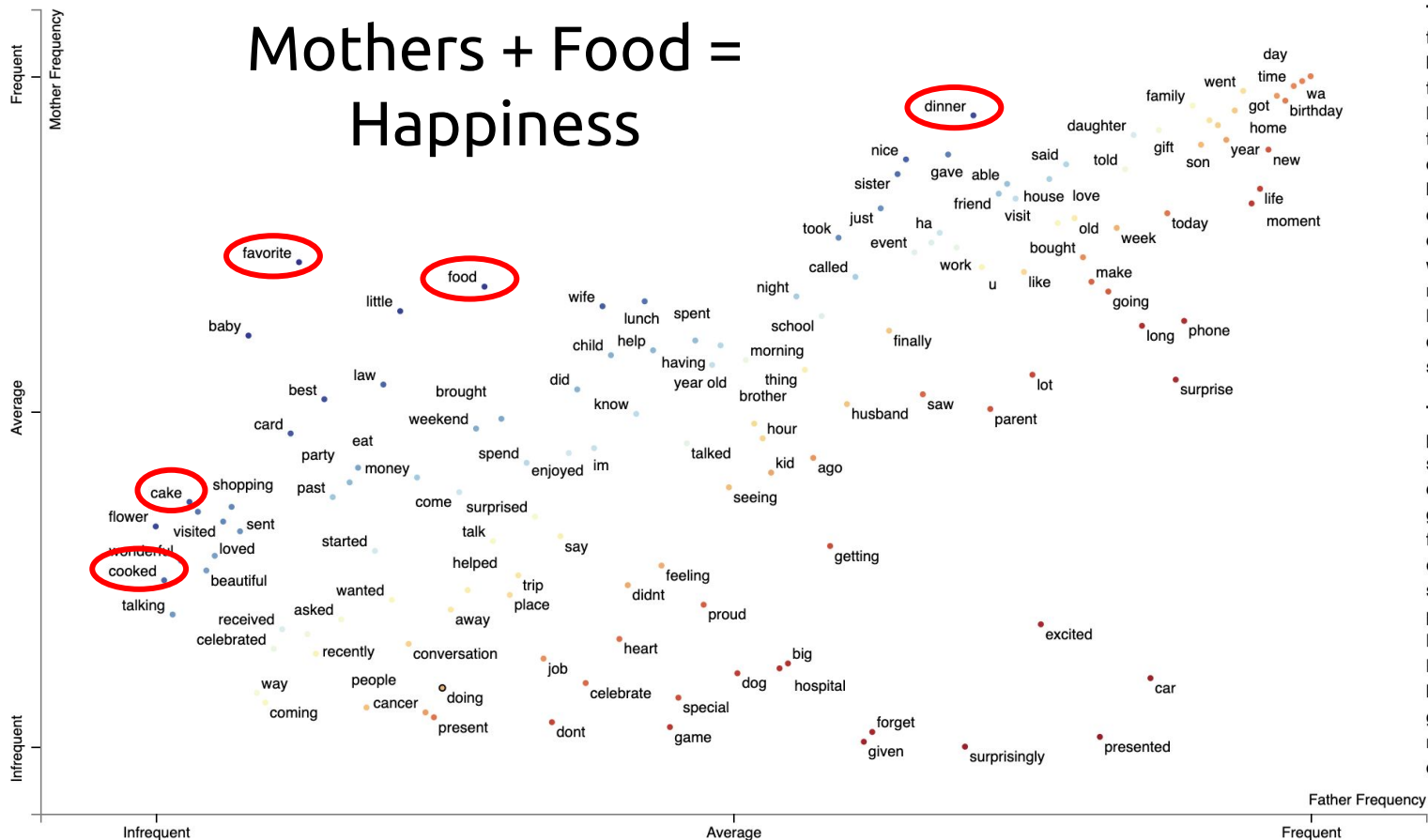
Top Mother	Characteristic
favorite	wa
baby	birthday
food	celebrated
little	surprisingly
flower	surprise
dinner	excited
best	cooked
cake	talked
card	dinner
wife	daughter
nice	surprised
law	ha
cooked	sister
sister	moment
	celebrate
	enjoyed
presented	went
surprisingly	lunch
car	gave
given	bought
forget	yesterday
excited	husband
surprise	conversation
phone	son
long	visited
hospital	proud
big	kid
game	cake
moment	came
dog	told

Search the chart

**Mother** document count: 2,654; word count: 28,931

**Father** document count: 1.349: word count: 14.849

# Mothers + Food = Happiness



Top Mother	Characteristic
favorite	wa
baby	birthday
food	celebrated
little	surprisingly
flower	surprise
dinner	excited
best	cooked
cake	talked
card	dinner
wife	daughter
nice	surprised
law	ha
cooked	sister
sister	moment
	celebrate
Top Father	
enjoyed	
went	
surprisingly	lunch
car	gave
given	bought
forget	yesterday
excited	husband
surprise	conversation
phone	son
long	visited
hospital	proud
big	kid
game	cake
moment	came
dog	told

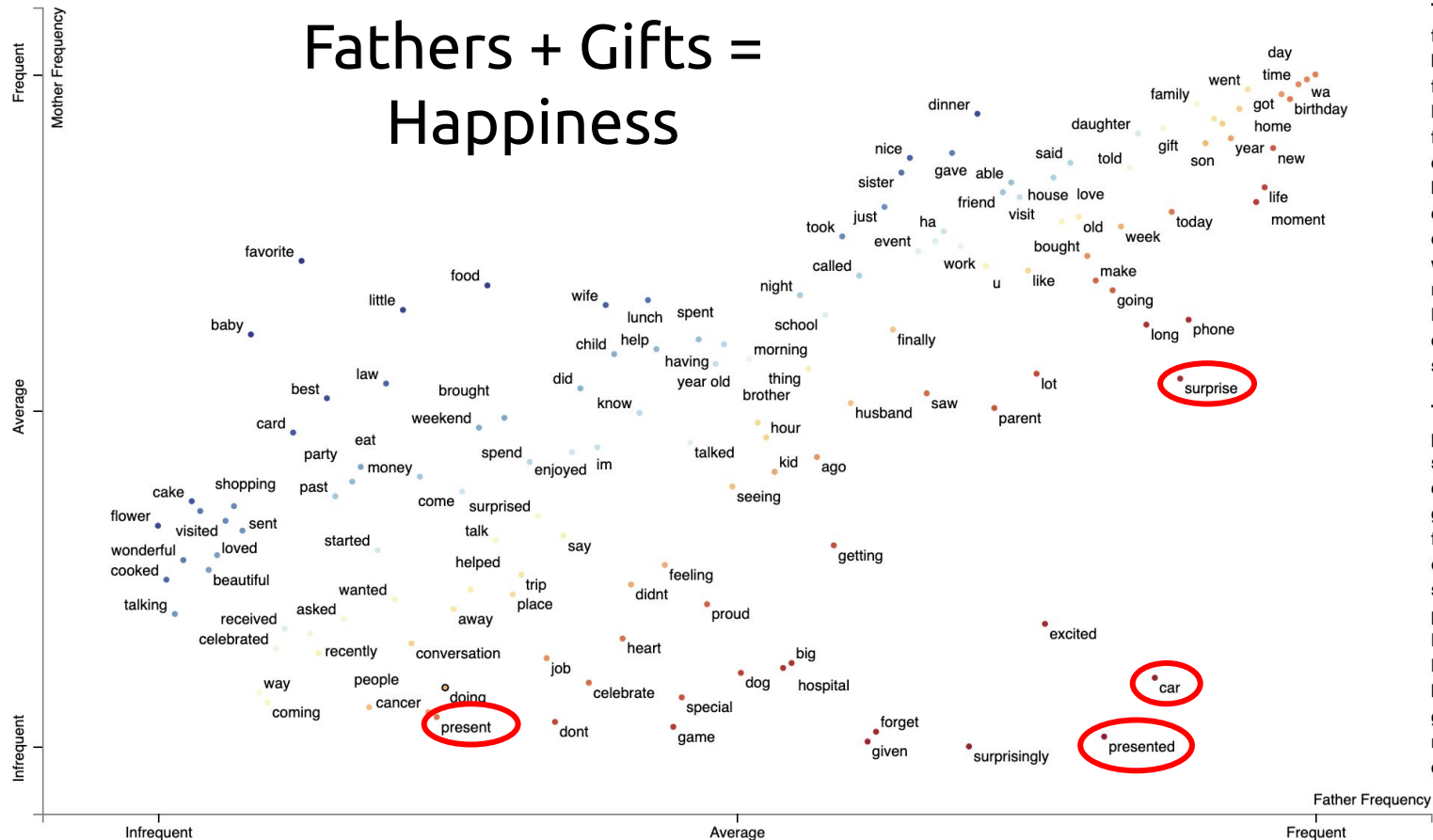
Search the chart

Mother document count: 2,654; word count: 28,931

Father document count: 1,349; word count: 14,849



# Fathers + Gifts = Happiness



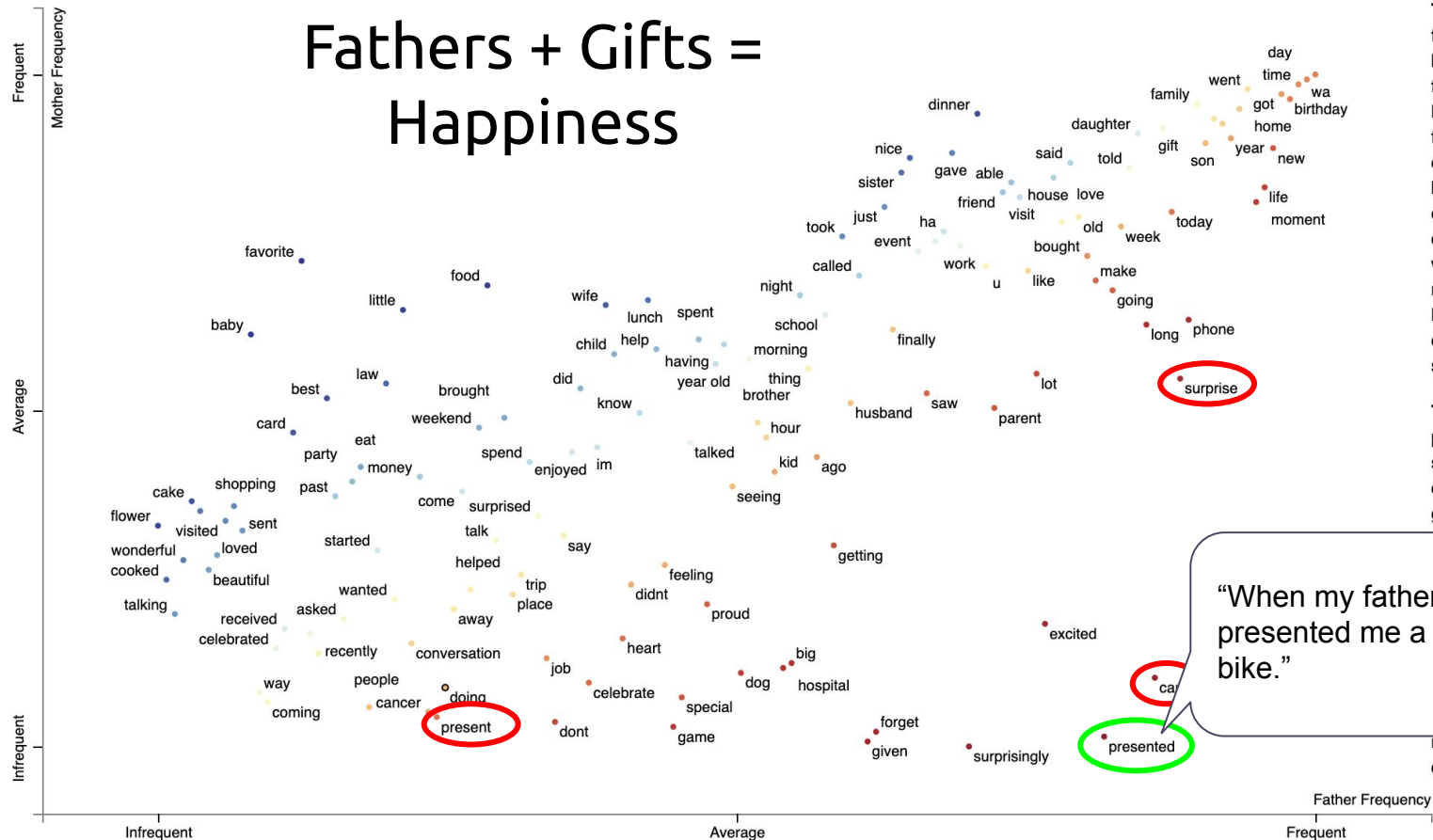
Top Mother	Characteristic
favorite	wa
baby	birthday
food	celebrated
little	surprisingly
flower	surprise
dinner	excited
best	cooked
cake	talked
card	dinner
wife	daughter
nice	surprised
law	ha
cooked	sister
sister	moment
	celebrate
<b>Top Father</b>	enjoyed
presented	went
surprisingly	lunch
car	gave
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forget	yesterday
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# Fathers + Gifts = Happiness



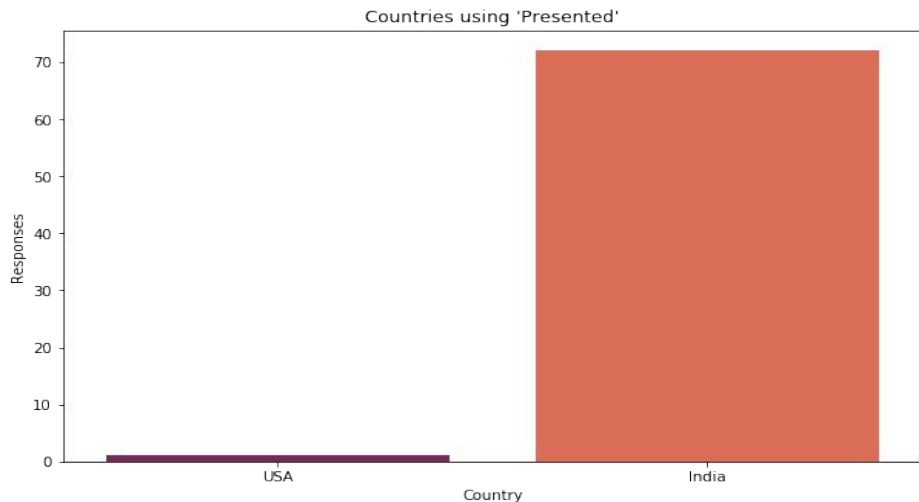
Top Mother	Characteristic
favorite	wa
baby	birthday
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	yesterday
	husband
	conversation
	son
	visited
	proud
	kid
	cake
	came
	told

Search the chart

Mother document count: 2,654; word count: 28,931

Father document count: 1,349; word count: 14,849

# Indian Fathers + Presenting Things = Happiness



**Top Mother**

favorite  
baby  
food  
little  
flower  
dinner  
best  
cake  
card  
wife  
nice  
law  
cooked  
sister

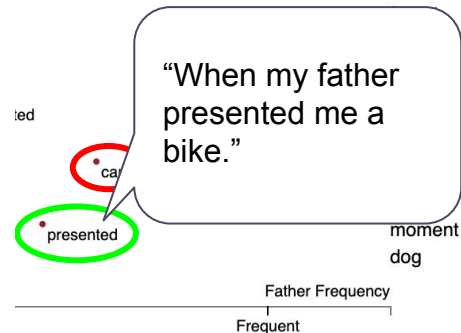
**Characteristic**

wa  
birthday  
celebrated  
surprisingly  
surprise  
excited  
cooked  
talked  
dinner  
daughter  
surprised  
ha  
sister  
moment  
celebrate

**Top Father**

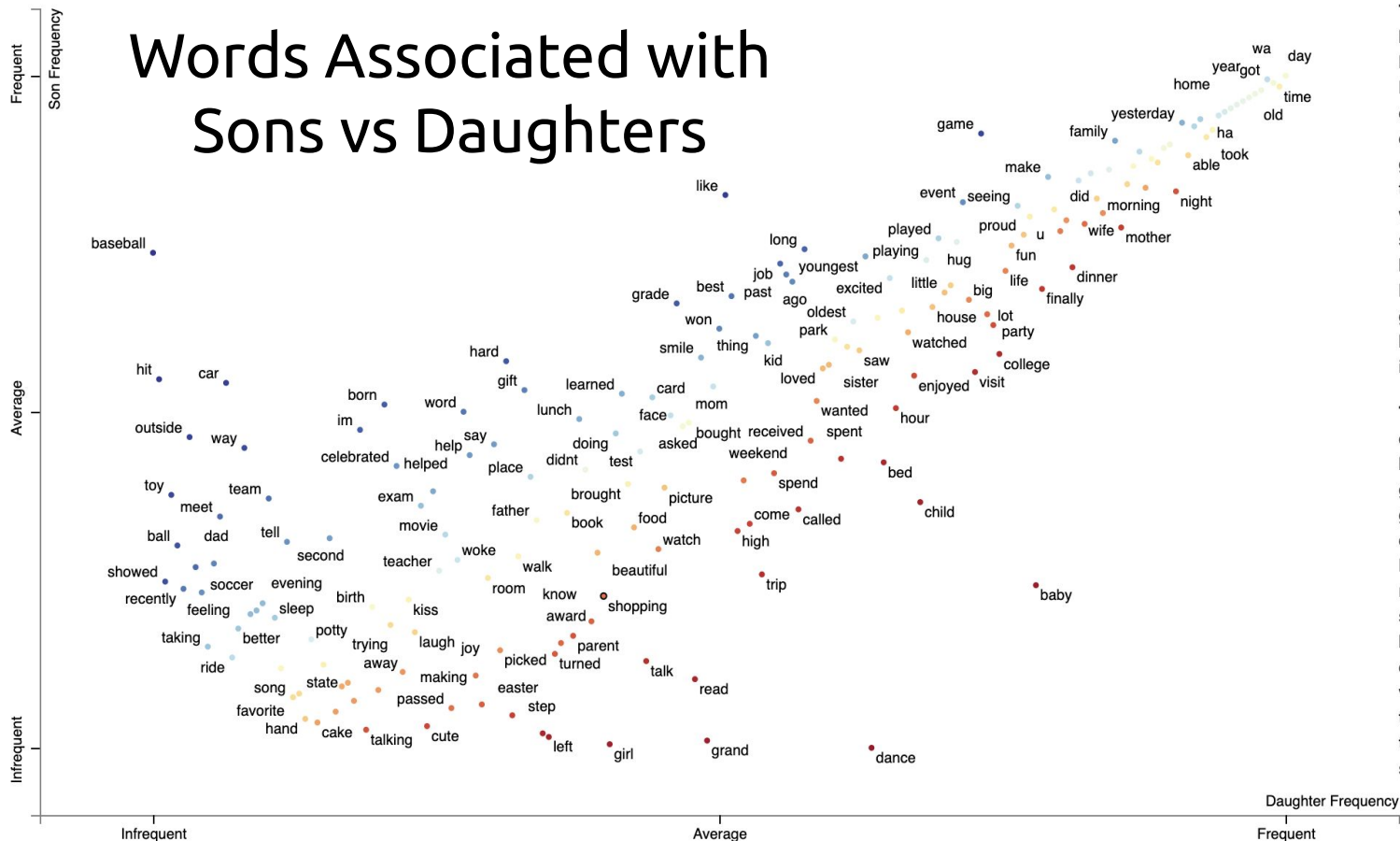
presented  
surprisingly  
car  
given

enjoyed  
went  
lunch  
gave  
bought  
yesterday  
husband  
conversation  
son  
visited  
proud  
kid  
cake  
came  
told



How do children  
make their parents  
happy?

# Words Associated with Sons vs Daughters



## Top Son Characteristic

baseball	wa
hit	hug
like	youngest
car	potty
outside	woke
game	celebrated
toy	ha
way	excited
showed	birthday
ball	watched
hard	proud
grade	watching
born	enjoyed
im	yesterday
husband	

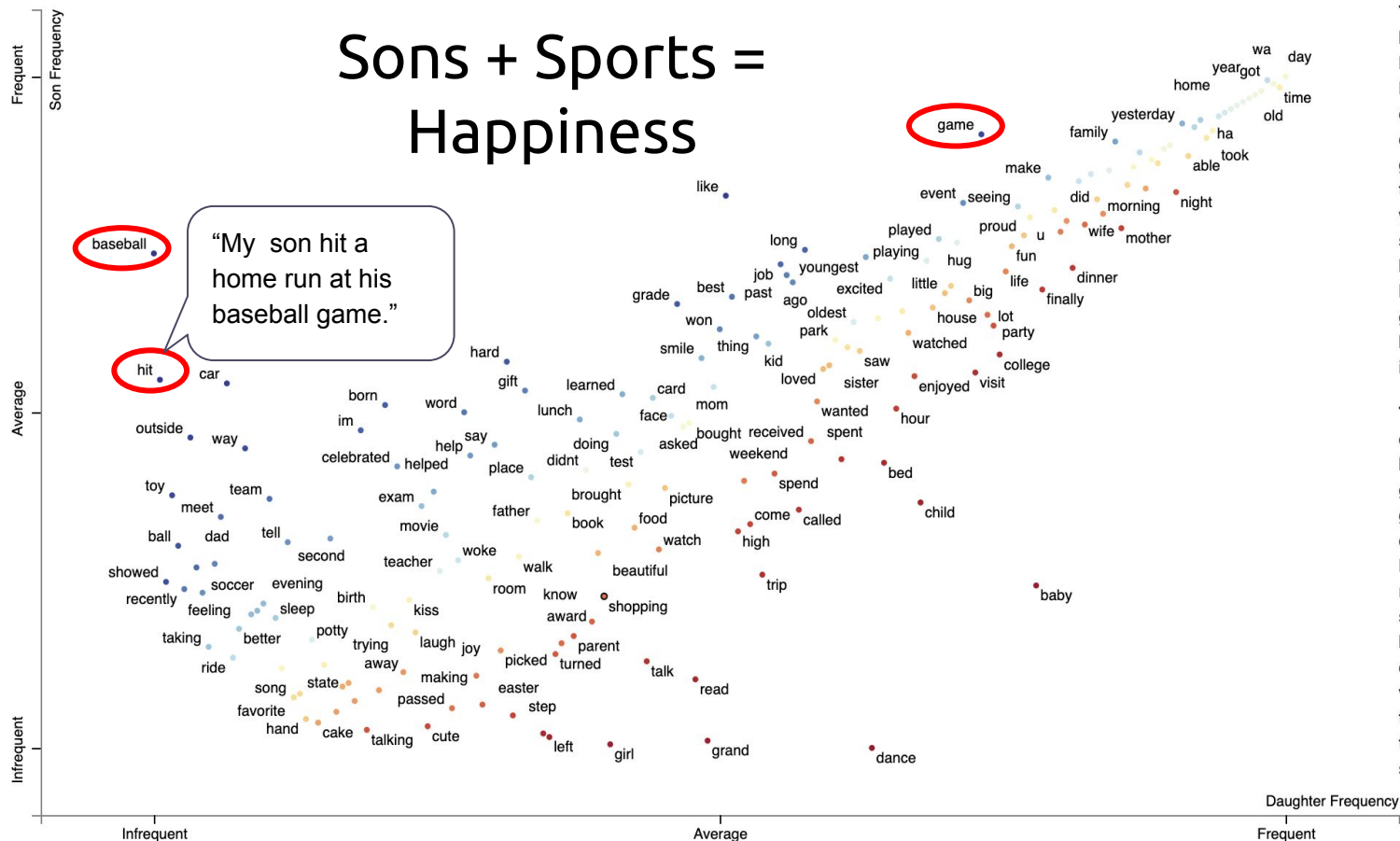
## Top Daughter

dance	smile
baby	went
grand	seeing
girl	easter
child	gave
left	dinner
read	laugh
step	moment
bed	loved
college	picked
visit	got
trip	kid
talk	told
spent	kiss

Search the chart

Son document count: 3,229; word count: 30,372  
 Daughter document count: 3,143; word count: 26,933

# Sons + Sports = Happiness



## Top Son Characteristic

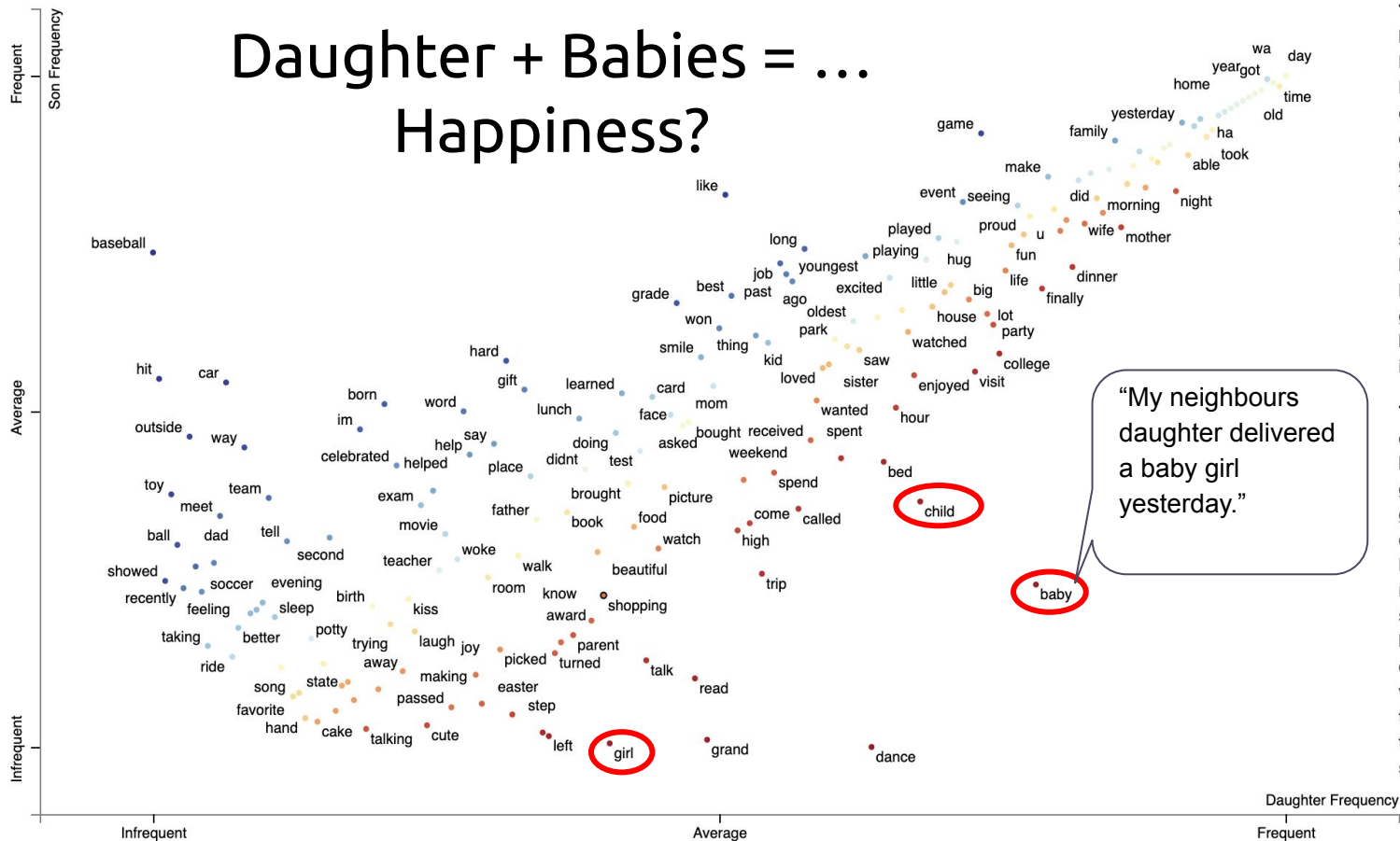
baseball	wa
hit	hug
like	youngest
car	potty
outside	woke
game	celebrated
toy	ha
way	excited
showed	birthday
ball	watched
hard	proud
grade	watching
born	enjoyed
im	yesterday
husband	husband

## Top Daughter

dance	smile
baby	went
grand	seeing
girl	easter
child	gave
left	dinner
read	laugh
step	moment
bed	loved
college	picked
visit	got
trip	kid
talk	told
spent	kiss

Search the chart

# Daughter + Babies = ... Happiness?



### Top Son Characteristic

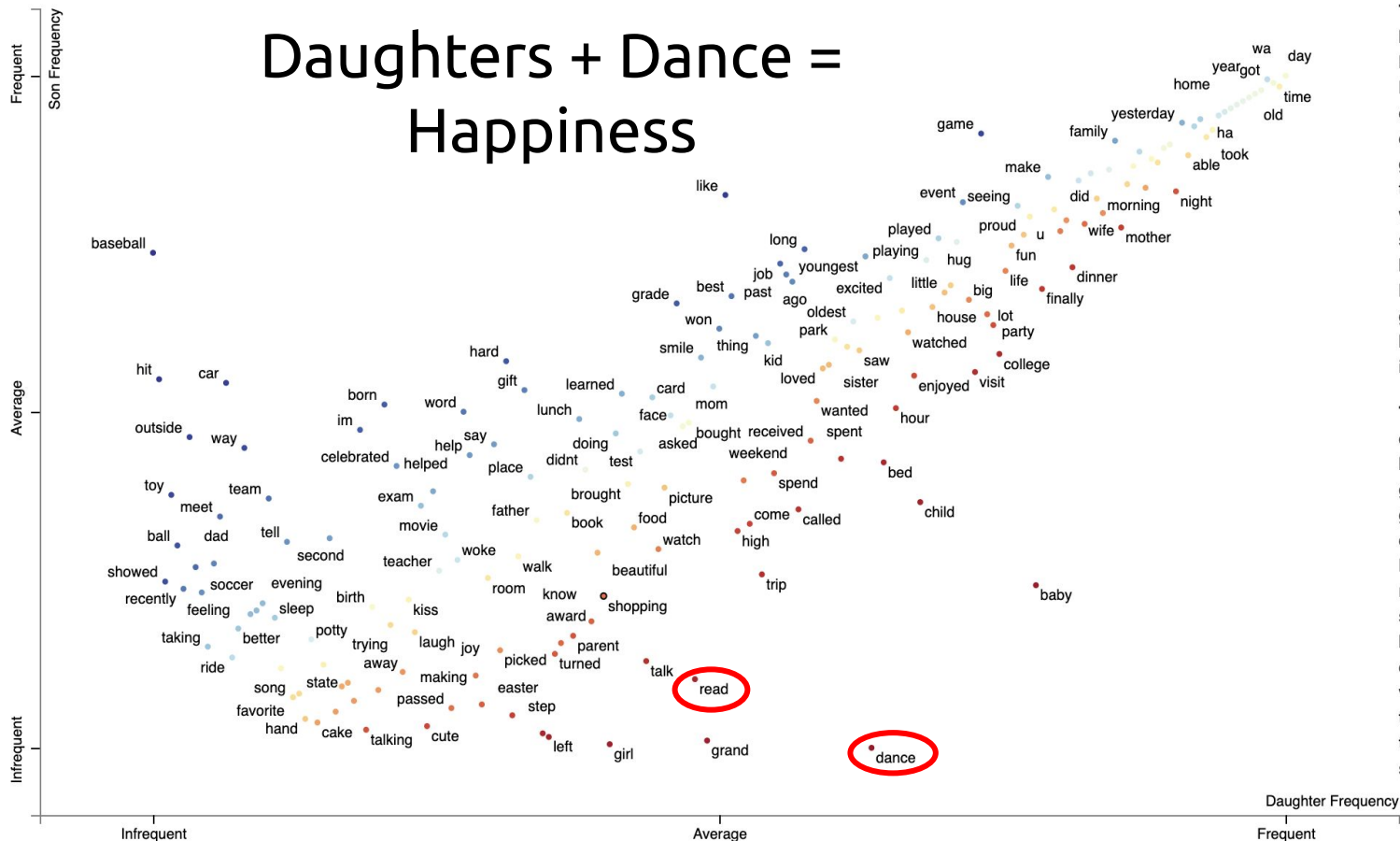
baseball	wa
hit	hug
like	youngest
car	potty
outside	woke
game	celebrated
toy	ha
way	excited
showed	birthday
ball	watched
hard	proud
grade	watching
born	enjoyed
im	yesterday
	husband

Top Daughter	Best
dance	smile
baby	went
grand	seeing
girl	easter
child	gave
left	dinner
read	laugh
step	moment
bed	loved
college	picked
visit	got
trip	kid
talk	told
spent	kiss

Search the chart

**Son** document count: 3,229; word count: 30,372  
**Daughter** document count: 3,143; word count: 26,933

# Daughters + Dance = Happiness



## Top Son Characteristic

baseball	wa
hit	hug
like	youngest
car	potty
outside	woke
game	celebrated
toy	ha
way	excited
showed	birthday
ball	watched
hard	proud
grade	watching
born	enjoyed
im	yesterday
	husband

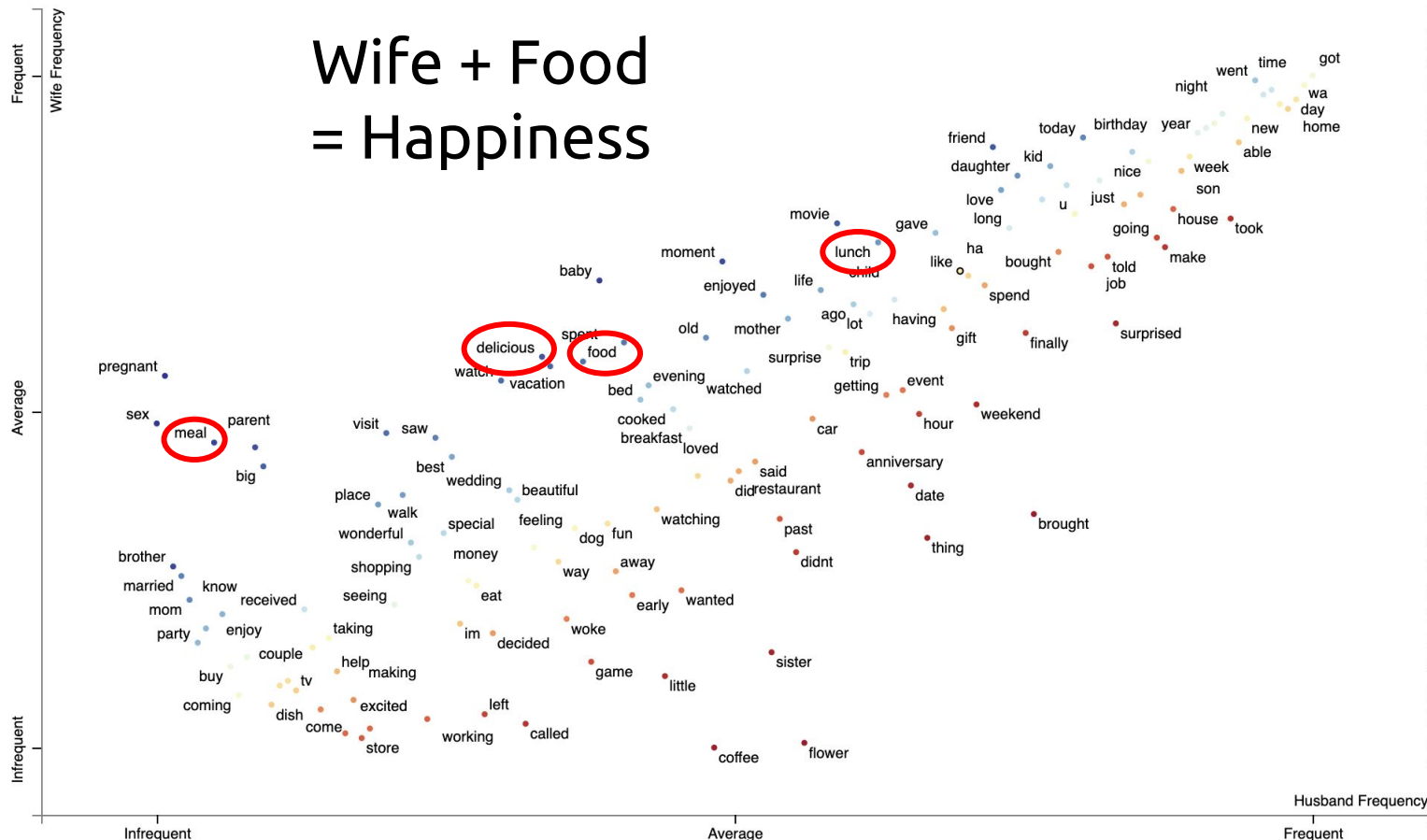
## Top Daughter

dance	best
	smile
baby	went
grand	seeing
girl	easter
child	gave
left	dinner
read	laugh
step	moment
bed	loved
college	picked
visit	got
trip	kid
talk	told
spent	kiss



How do husbands  
and wives make each  
other happy?

Wife + Food  
= Happiness



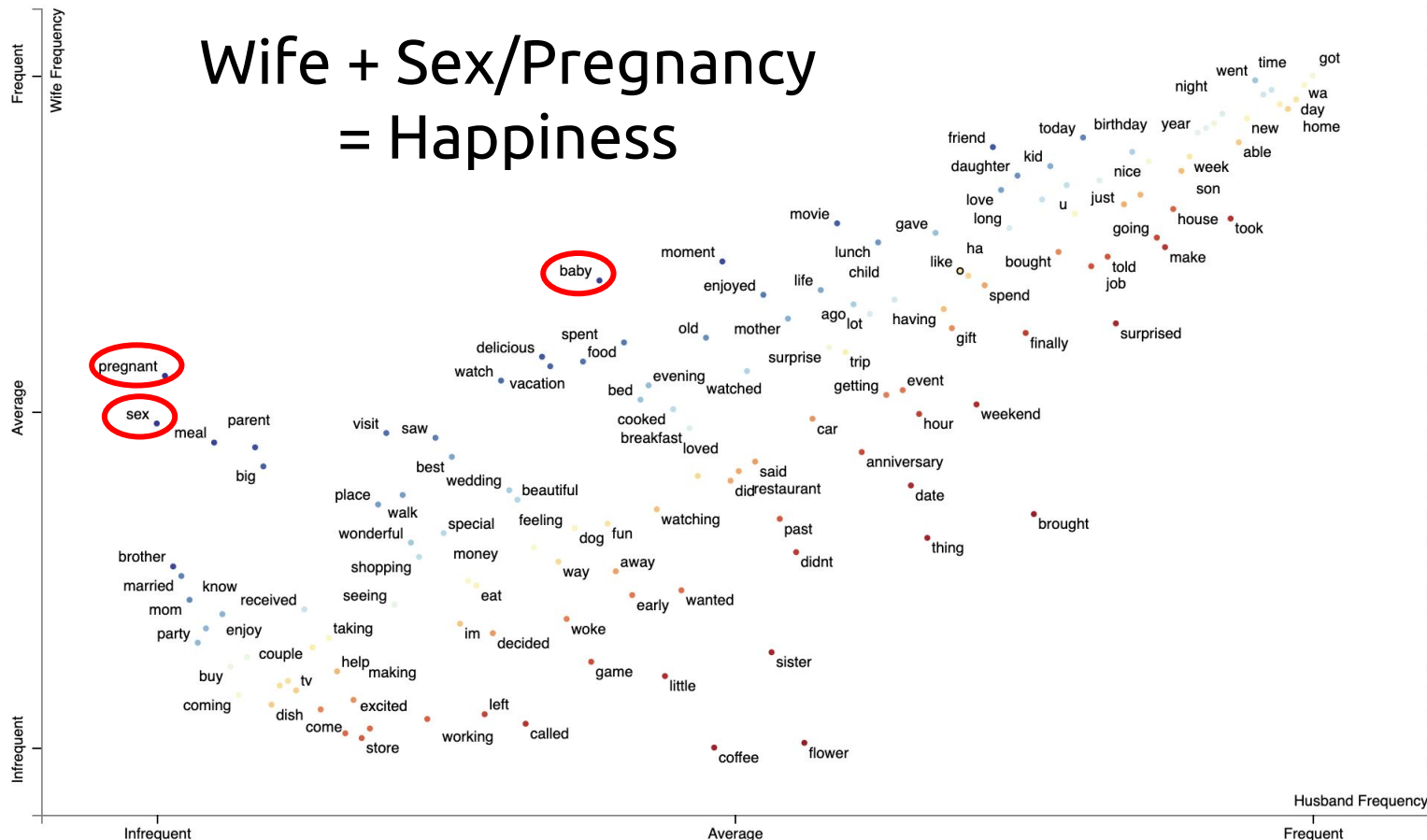
### Top Wife Characteristics

pregnant	wa
sex	woke
baby	dinner
meal	cooked
brother	surprised
moment	delicious
parent	watched
delicious	enjoyed
friend	kid
movie	went
big	surprise
vacation	birthday
watch	lunch
visit	daughter
	ha
<b>Top Husband</b>	yesterday
flower	anniversary
brought	spend
coffee	bought
thing	excited
sister	meal
surprised	loved
date	got
weekend	gave
little	watching
took	son
called	took
make	weekend
didn't	came
finally	morning

Search the chart

**Wife** document count: 2,508; word count: 22,145  
**Husband** document count: 2,571; word count: 24,004

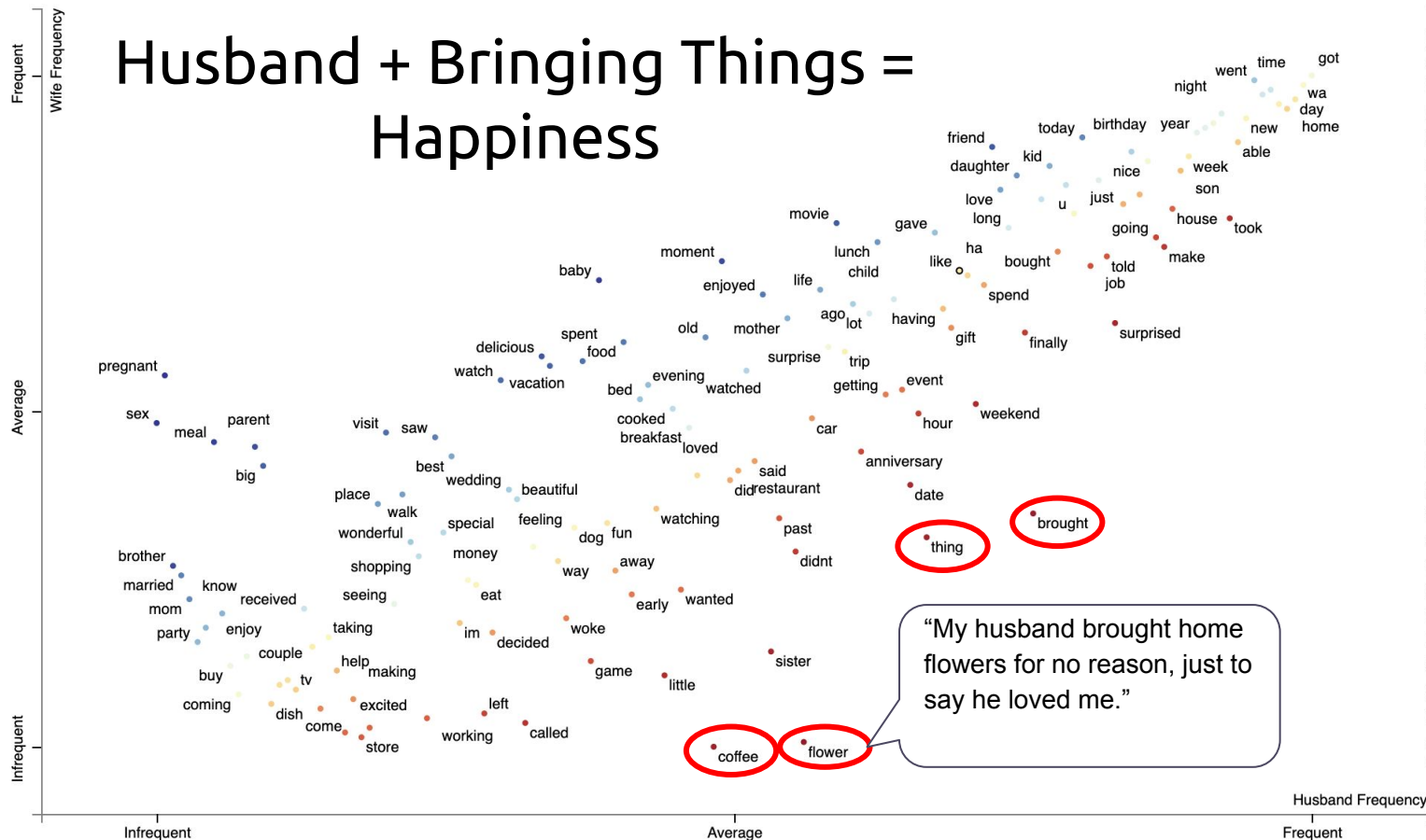
# Wife + Sex/Pregnancy = Happiness



Top Wife	Characteristi
pregnant	wa
sex	woke
baby	dinner
meal	cooked
brother	surprised
moment	delicious
parent	watched
delicious	enjoyed
friend	kid
movie	went
big	surprise
vacation	birthday
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Top Husband	
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weekend	gave
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took	son
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Search the chart

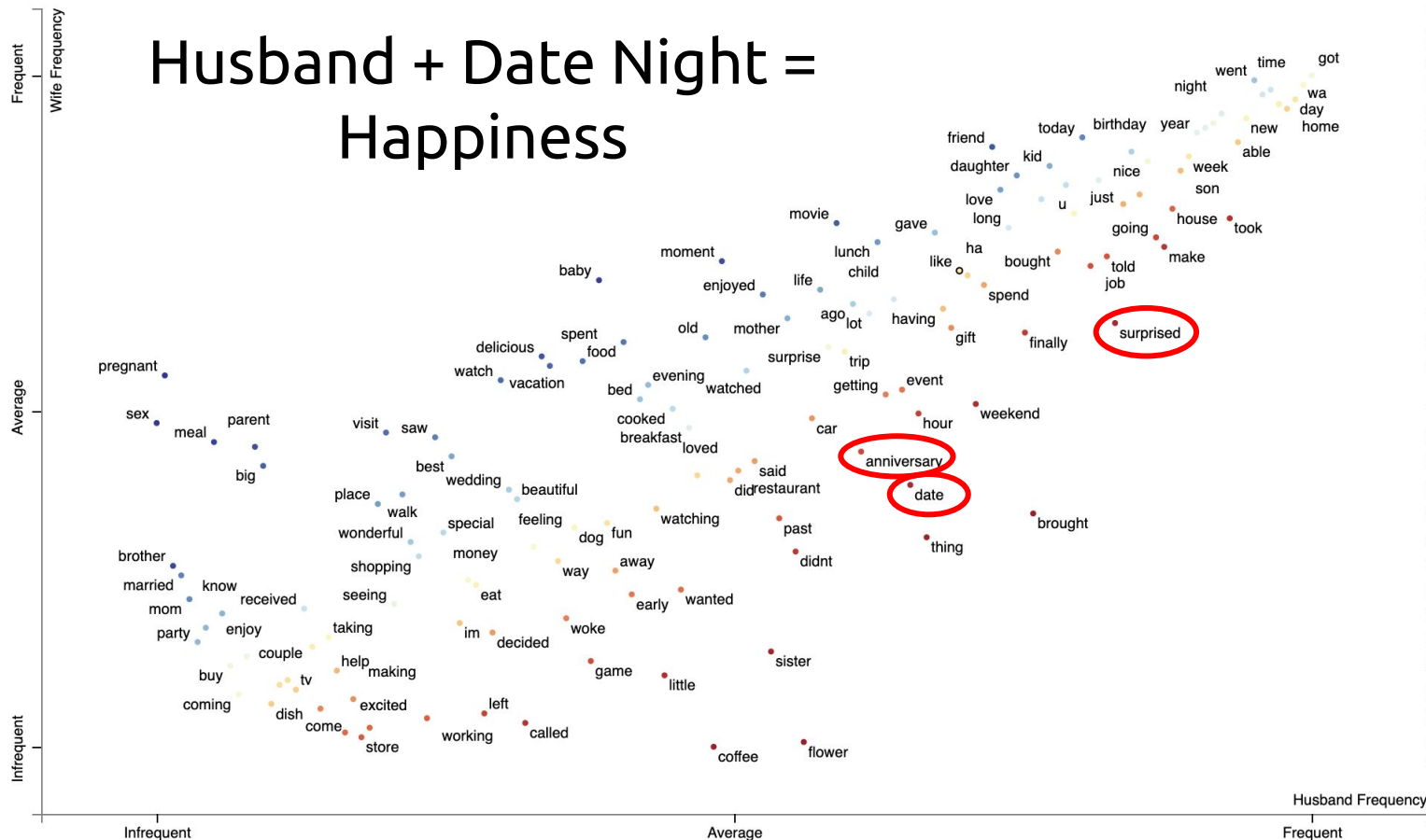
# Husband + Bringing Things = Happiness



Top Wife	Characteristi
pregnant	wa
sex	woke
baby	dinner
meal	cooked
brother	surprised
moment	delicious
parent	watched
delicious	enjoyed
friend	kid
movie	went
big	surprise
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date	got
weekend	gave
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took	son
called	took
make	weekend
didn't	came
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Search the chart

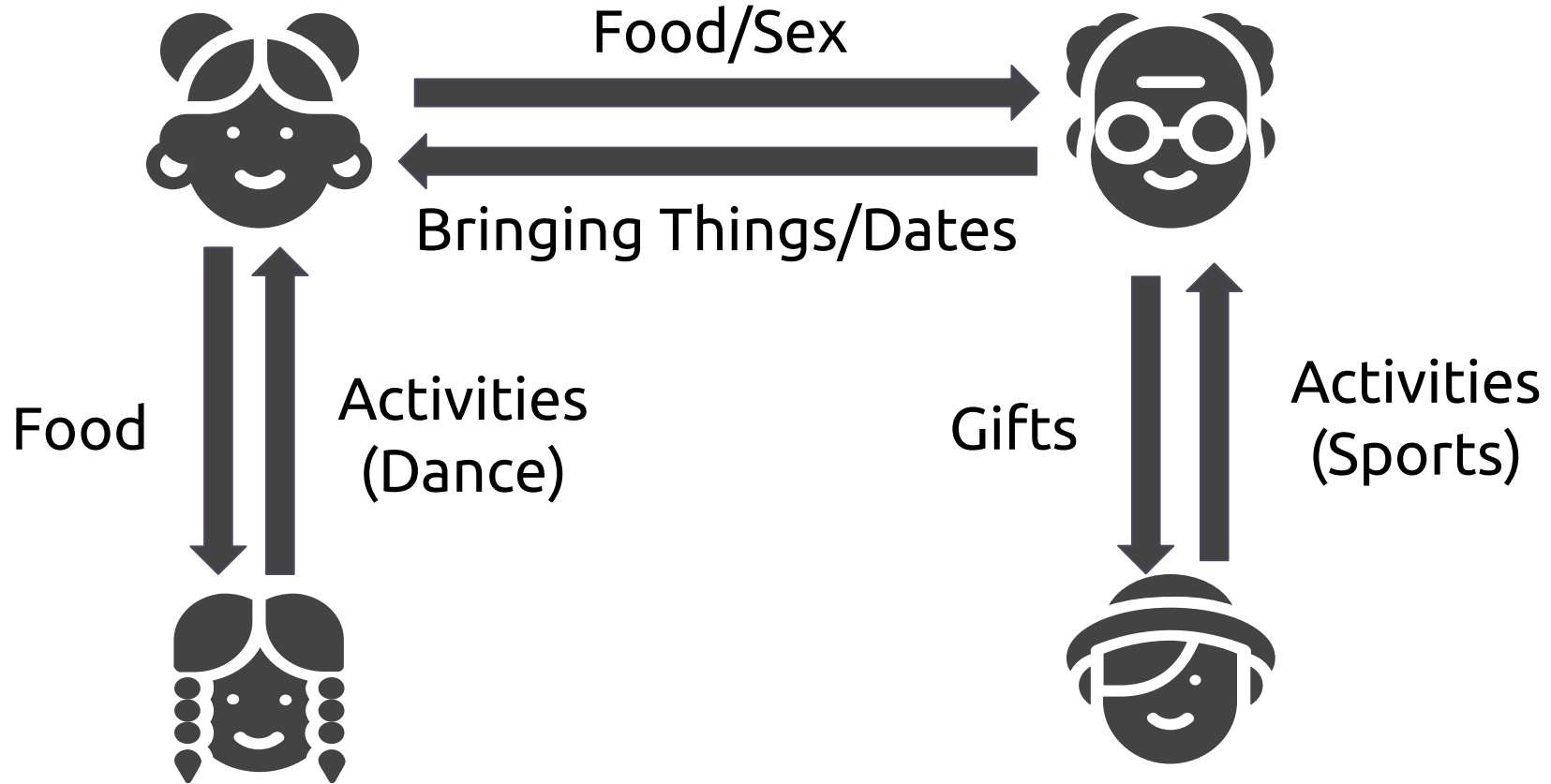
# Husband + Date Night = Happiness



Top Wife	Characteristi
pregnant	wa
sex	woke
baby	dinner
meal	cooked
brother	surprised
moment	delicious
parent	watched
delicious	enjoyed
friend	kid
movie	went
big	surprise
vacation	birthday
watch	lunch
visit	daughter
ha	ha
Top Husband	yesterday
flower	anniversary
brought	spend
coffee	bought
thing	excited
sister	meal
surprised	loved
date	got
weekend	gave
little	watching
took	son
called	took
make	weekend
didn't	came
finally	morning

Search the chart

# Summary



# Conclusions and Next Steps

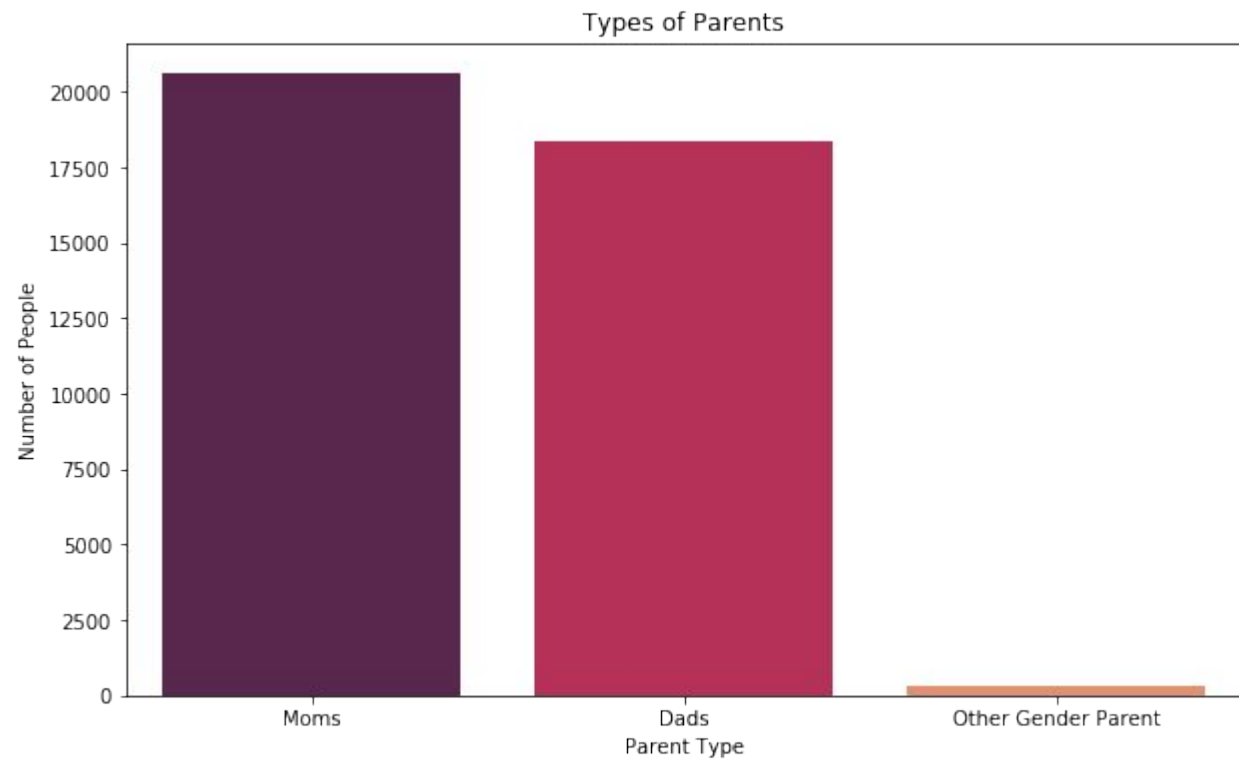
- Caution interpreting results!
  - Could mother = caretaker?
- Next steps:
  - Improve topic modeling accuracy
  - Proto-agent and Root verbs
  - More data to explore!
    - Religion
    - Wealth
    - Long term/short term happiness

Thank you!  
Questions?

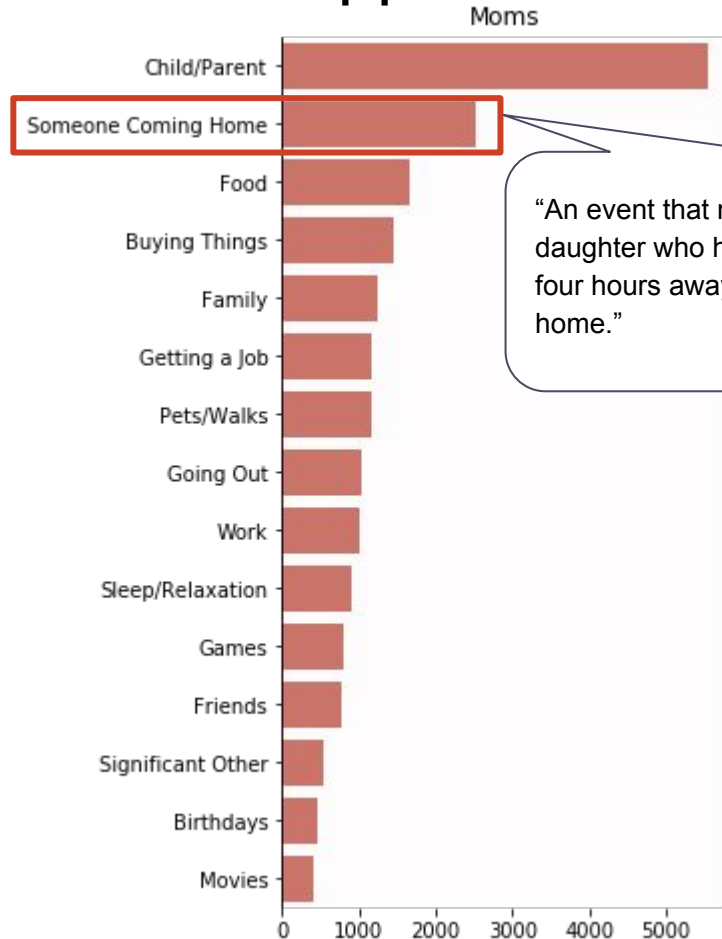


# Appendix

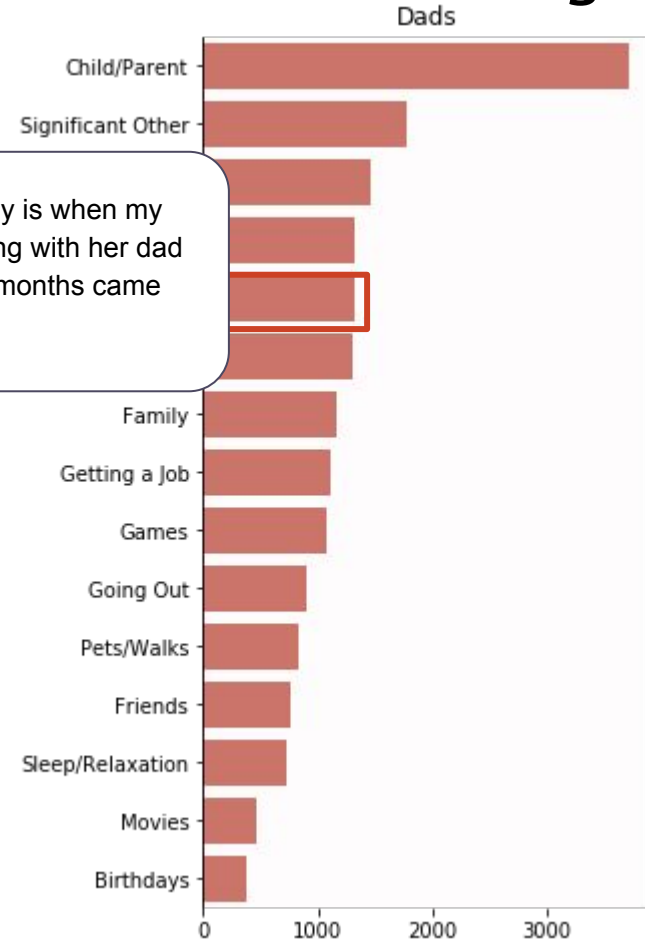
# Sources of Happiness for Mothers/Fathers



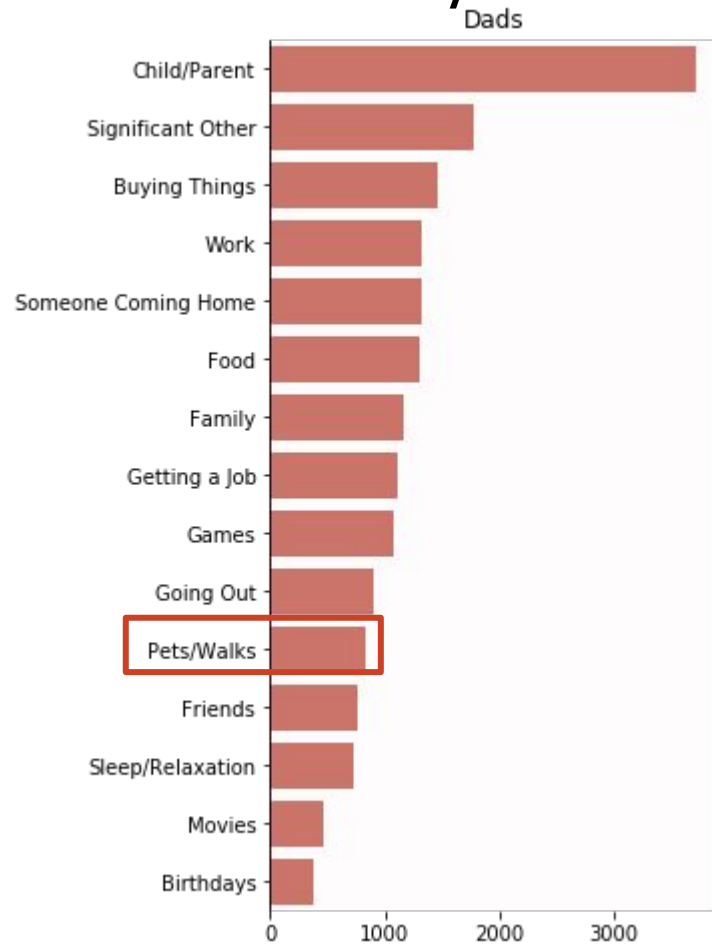
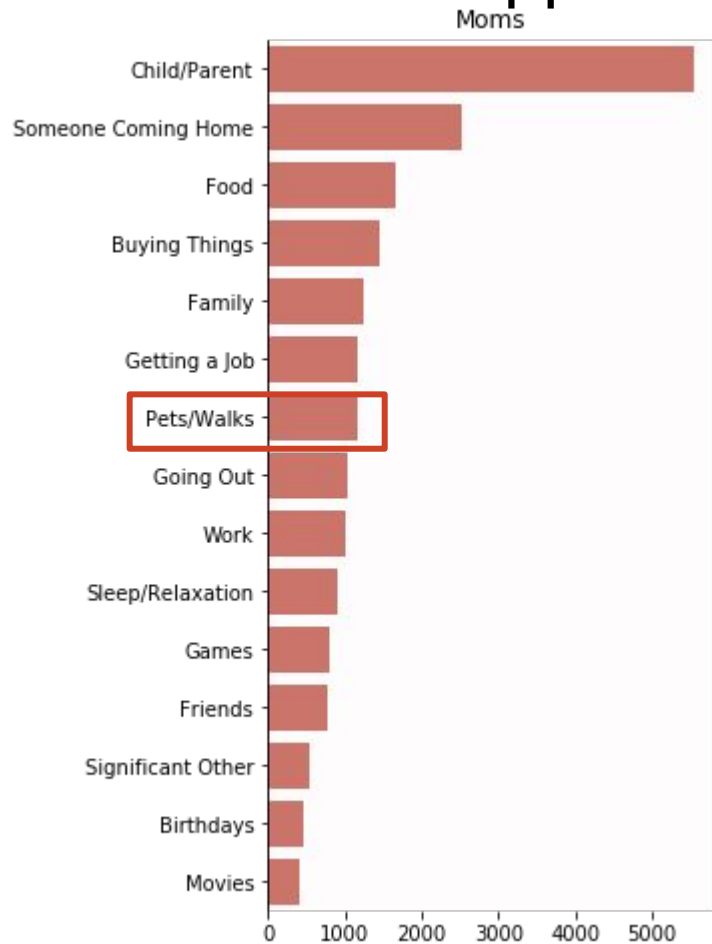
# Source of happiness for mothers: Someone Coming Home



"An event that made me happy is when my daughter who had been staying with her dad four hours away for almost 6 months came home."



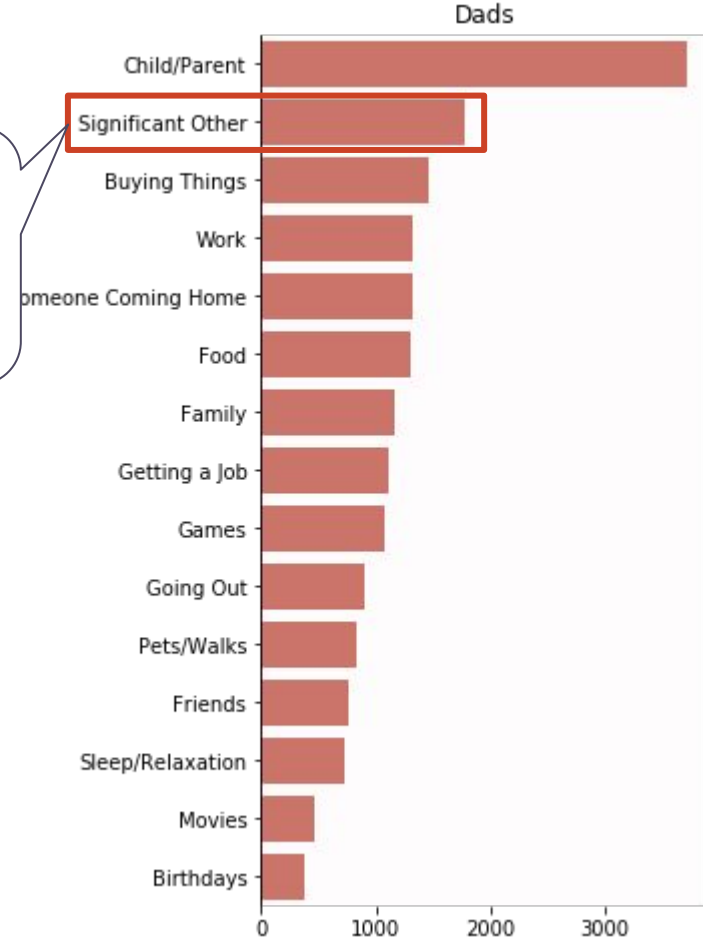
# Source of happiness for mothers: Pets/Walks



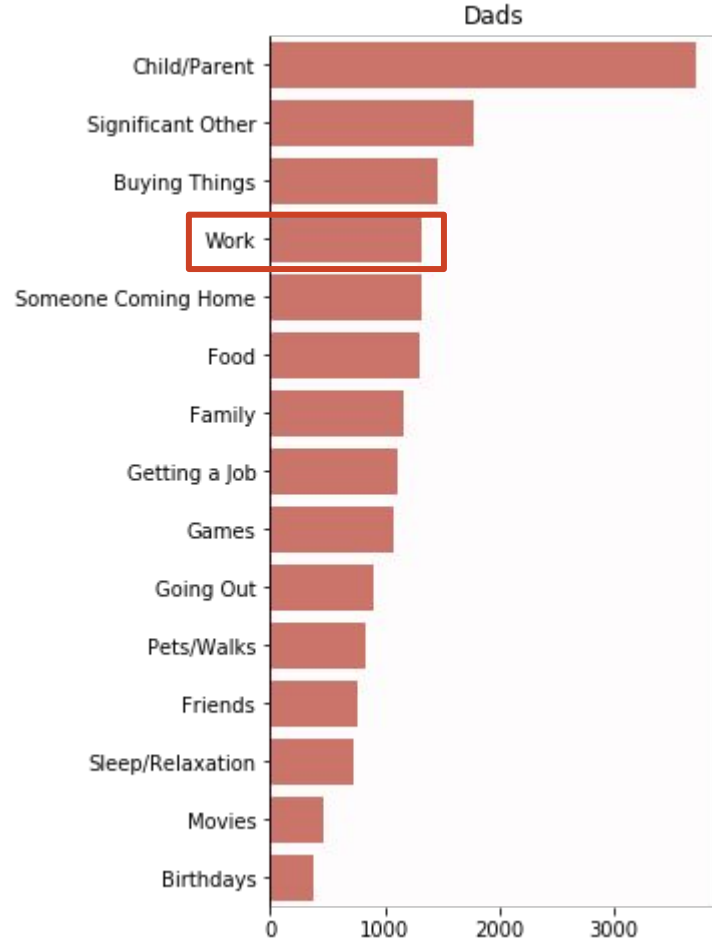
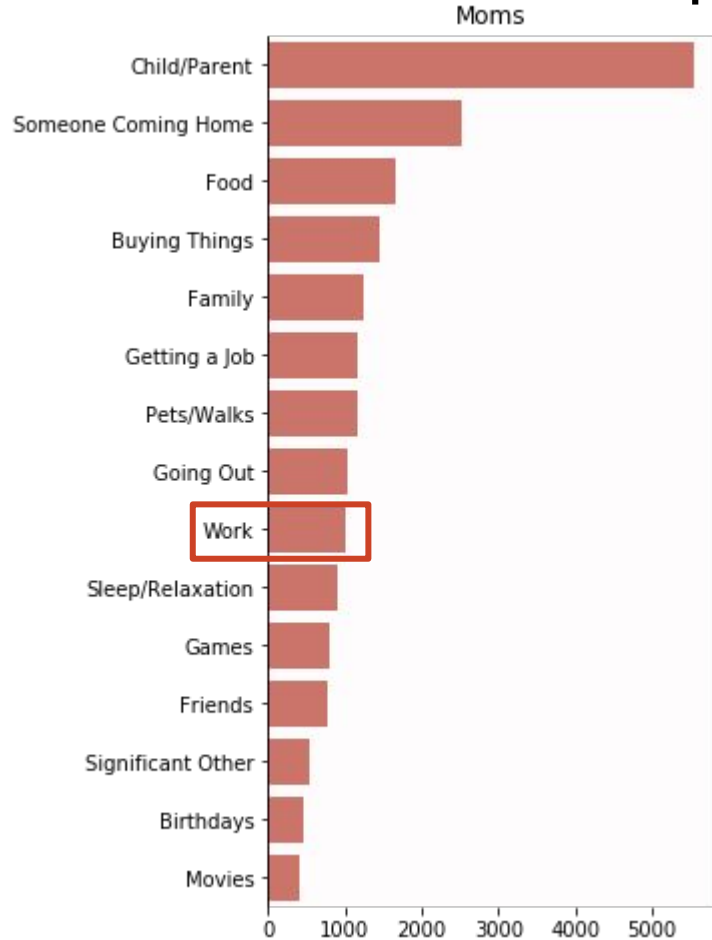
# Source of happiness for fathers: Significant Other



"Today i took the day off from my part time job to go and have a brunch date with my wonderful wife."

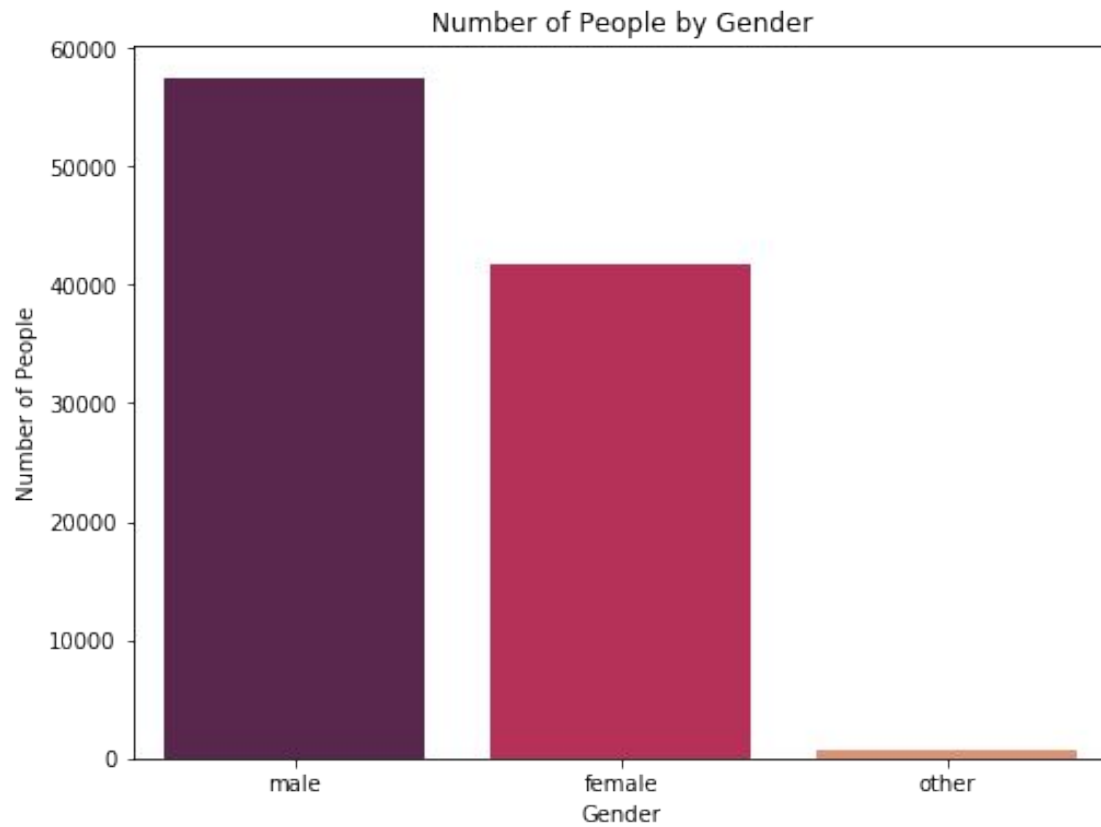


# Source of happiness for fathers: Work

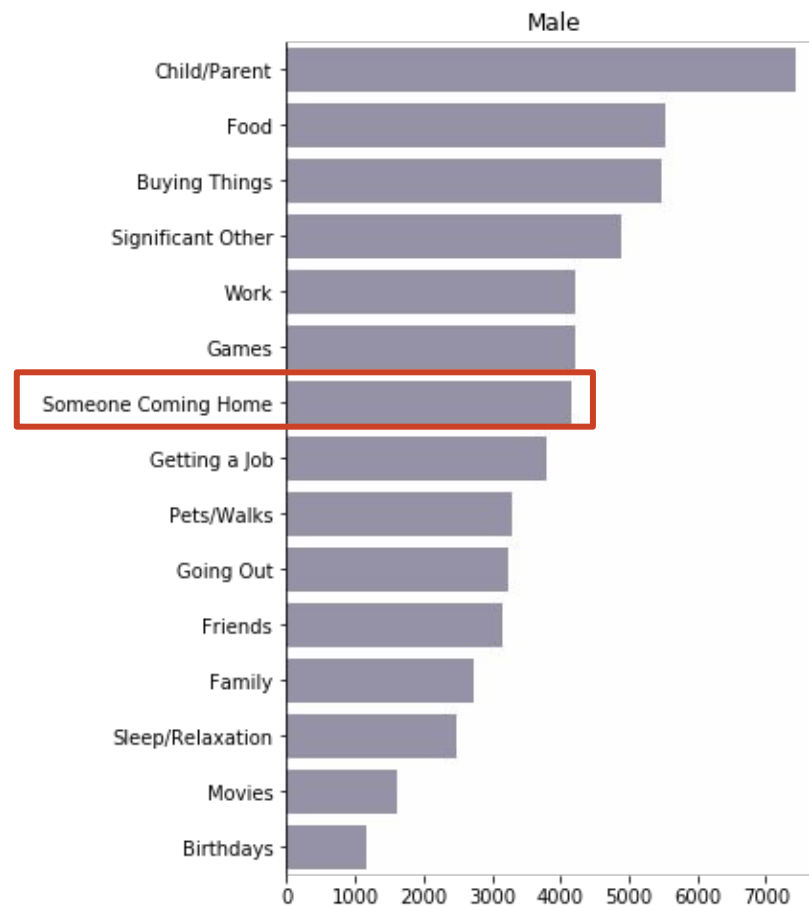
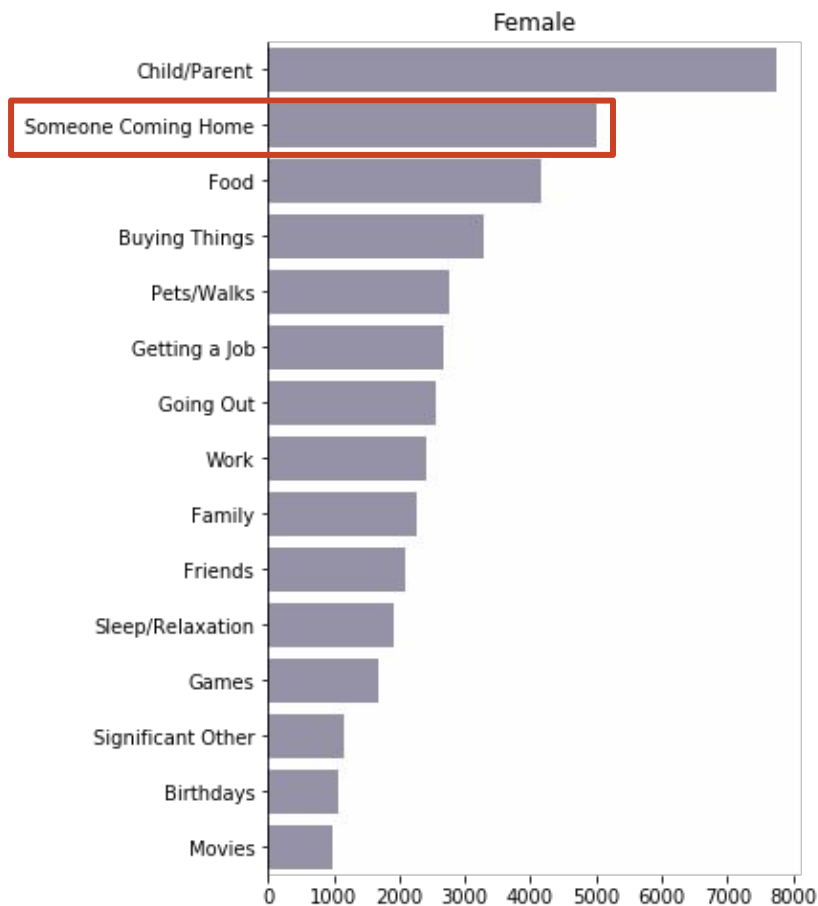


# Sources of Happiness by Gender

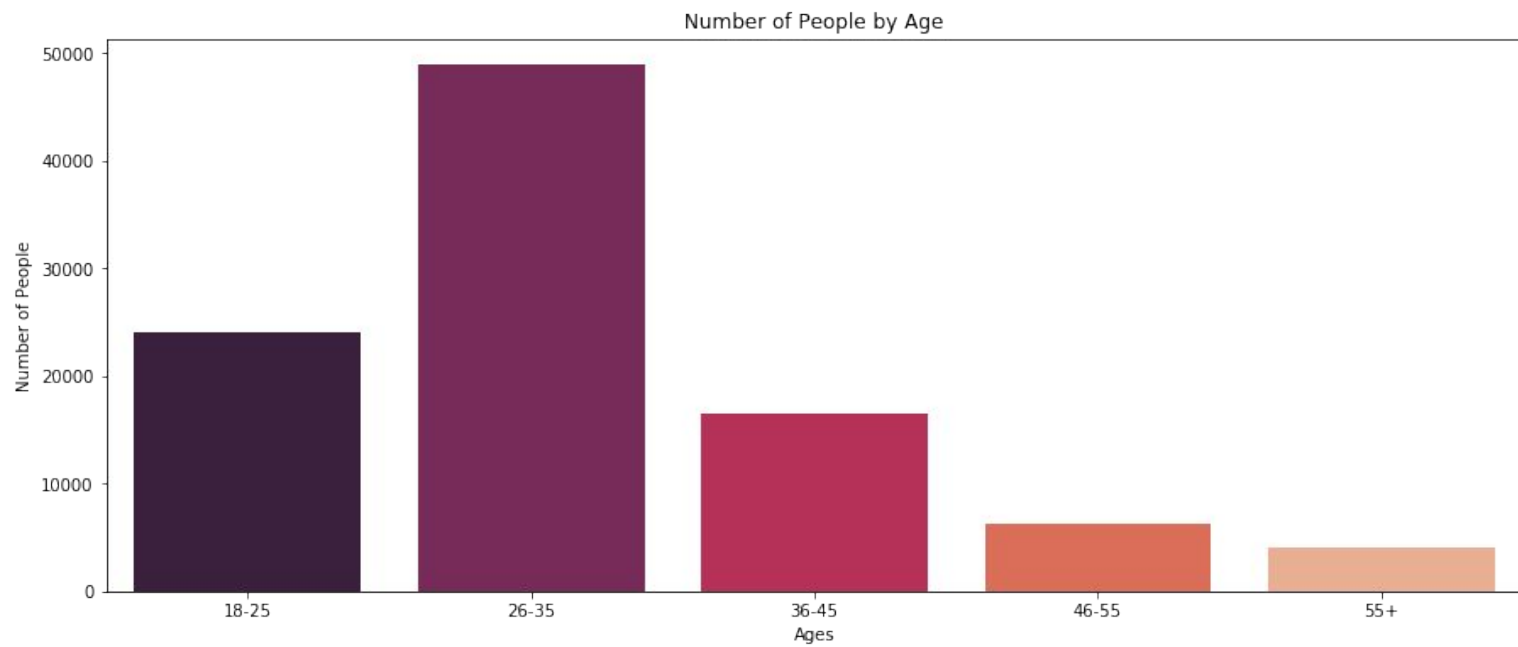




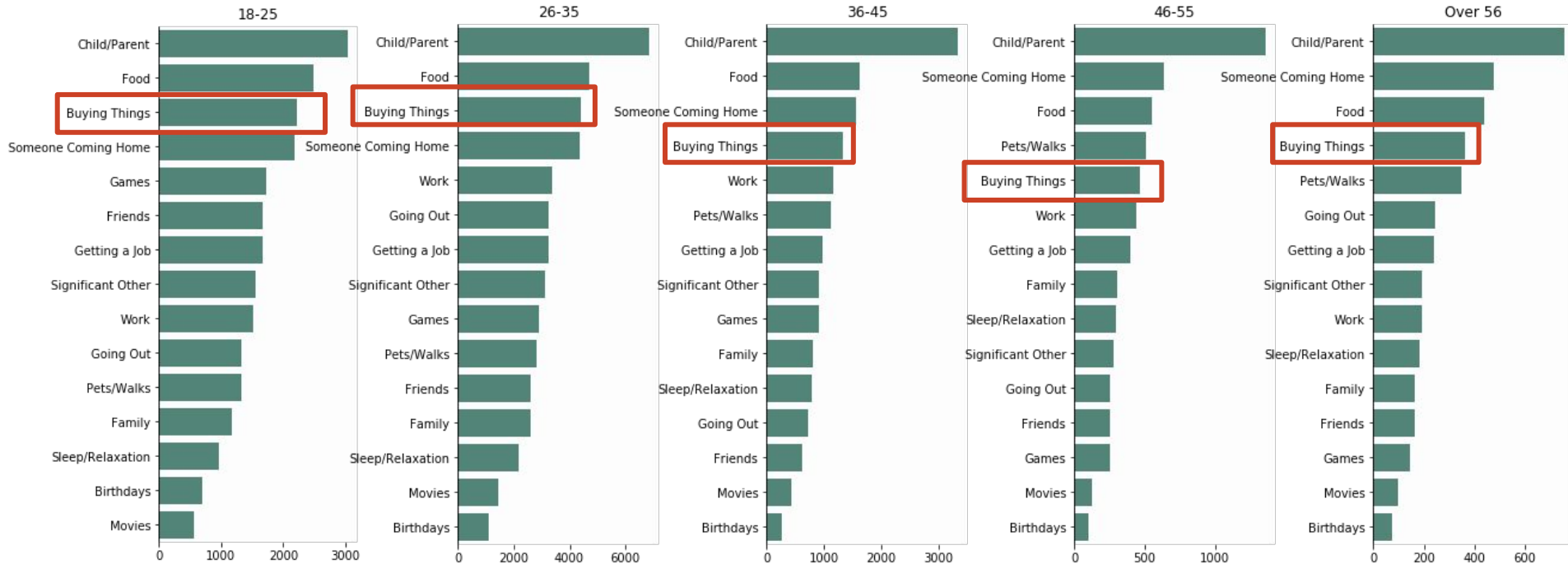
# Women vs Men



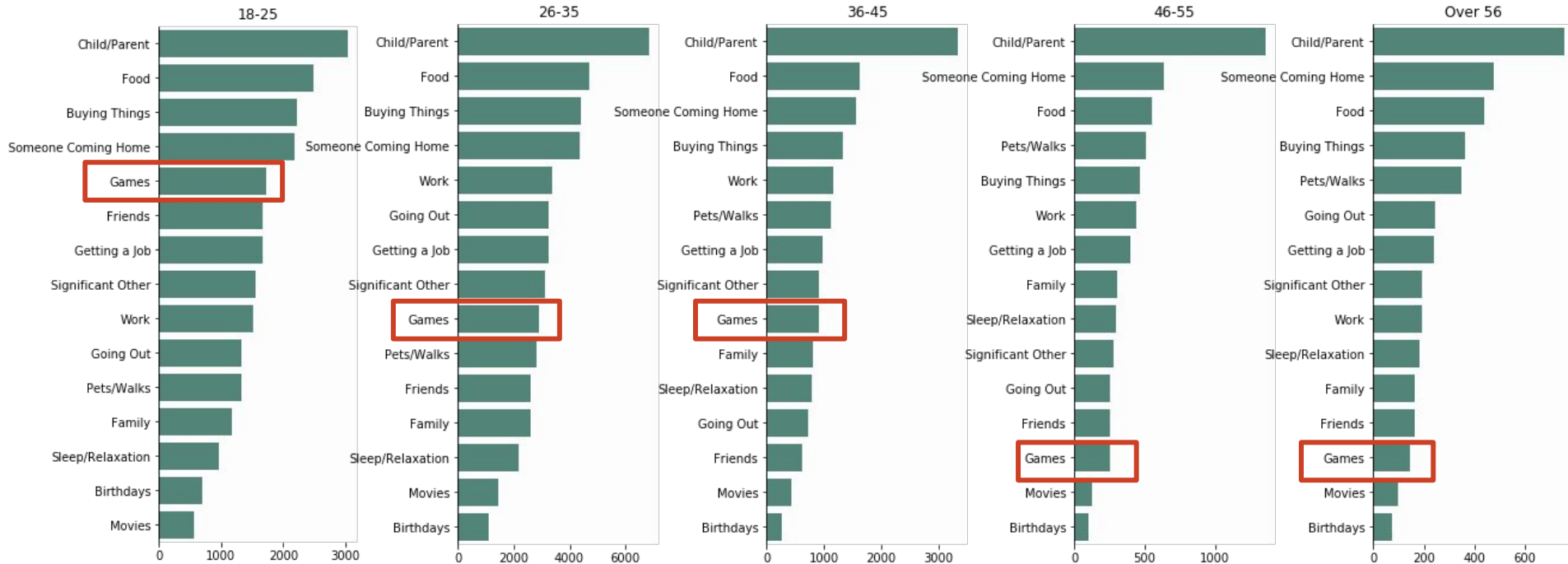
# Sources of Happiness by Age



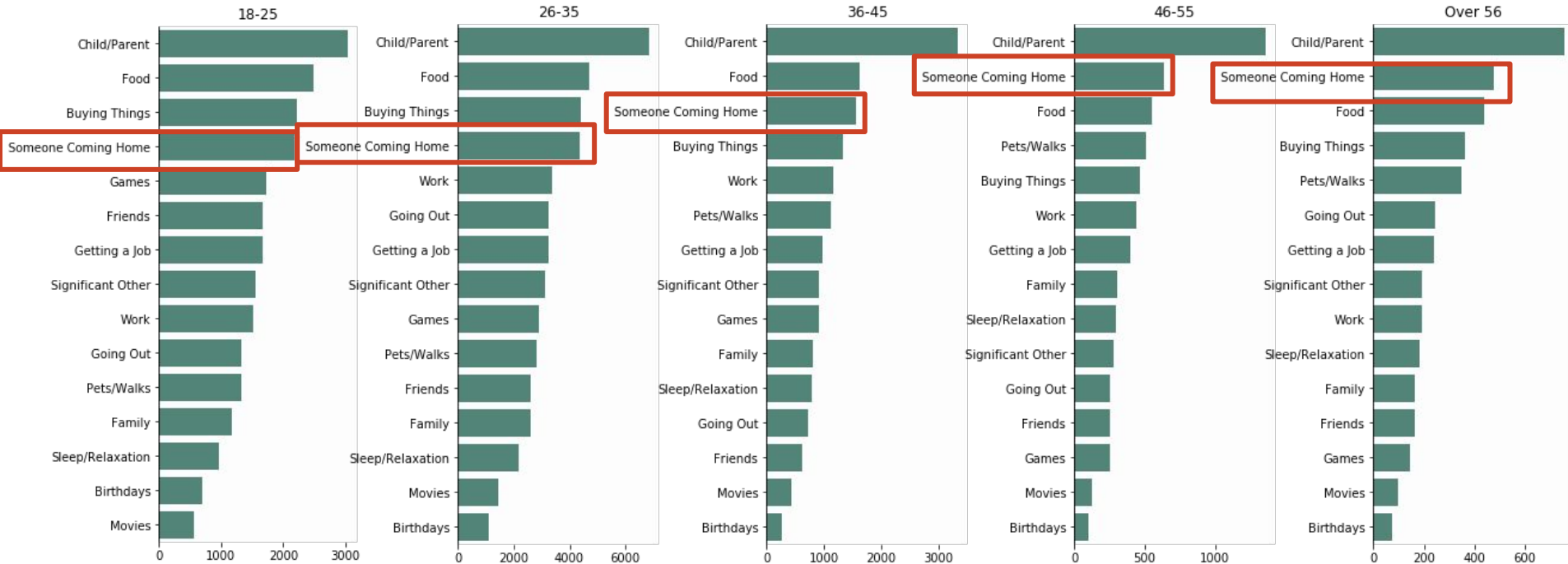
# Ages: Buying Things



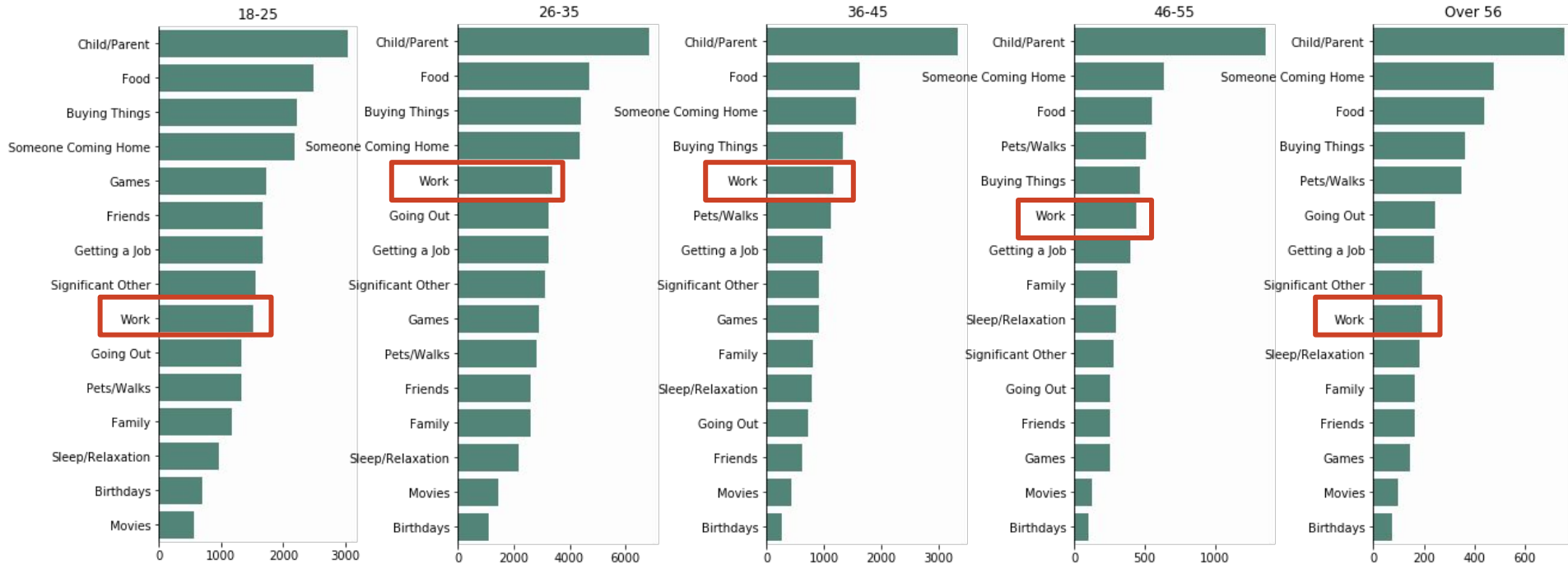
# Ages: Games



# Ages: Someone Coming Home

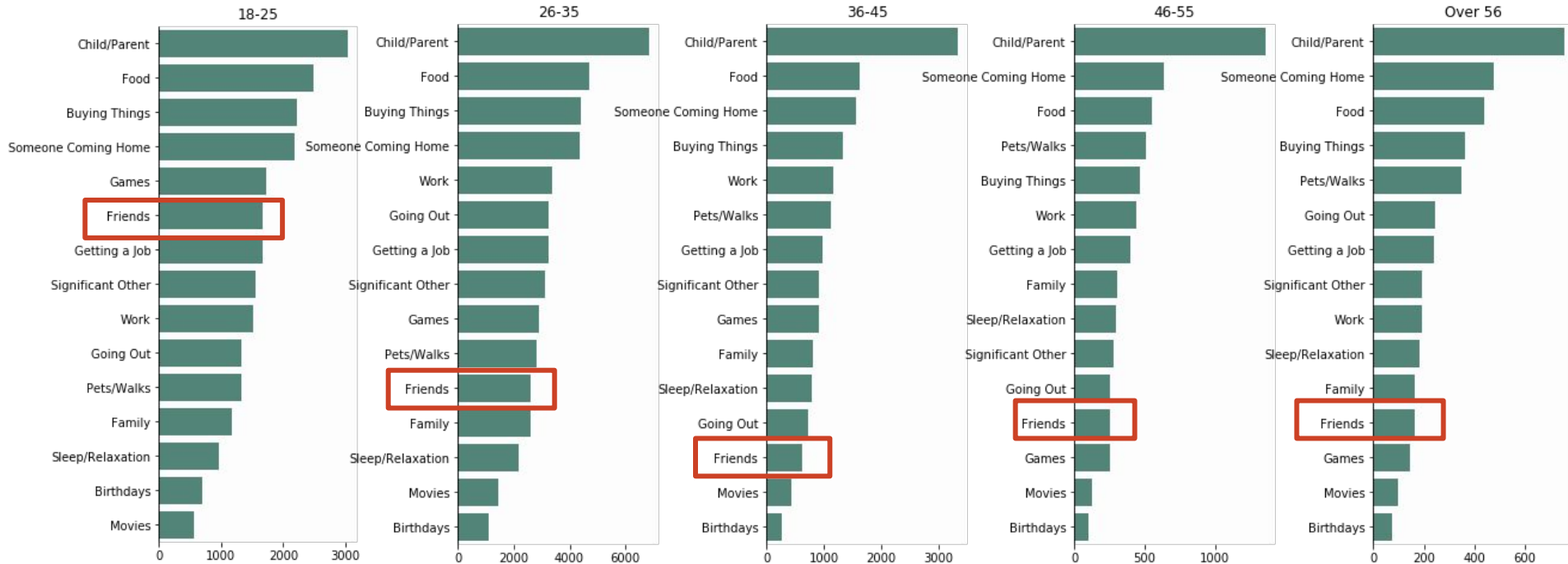


# Ages: Work

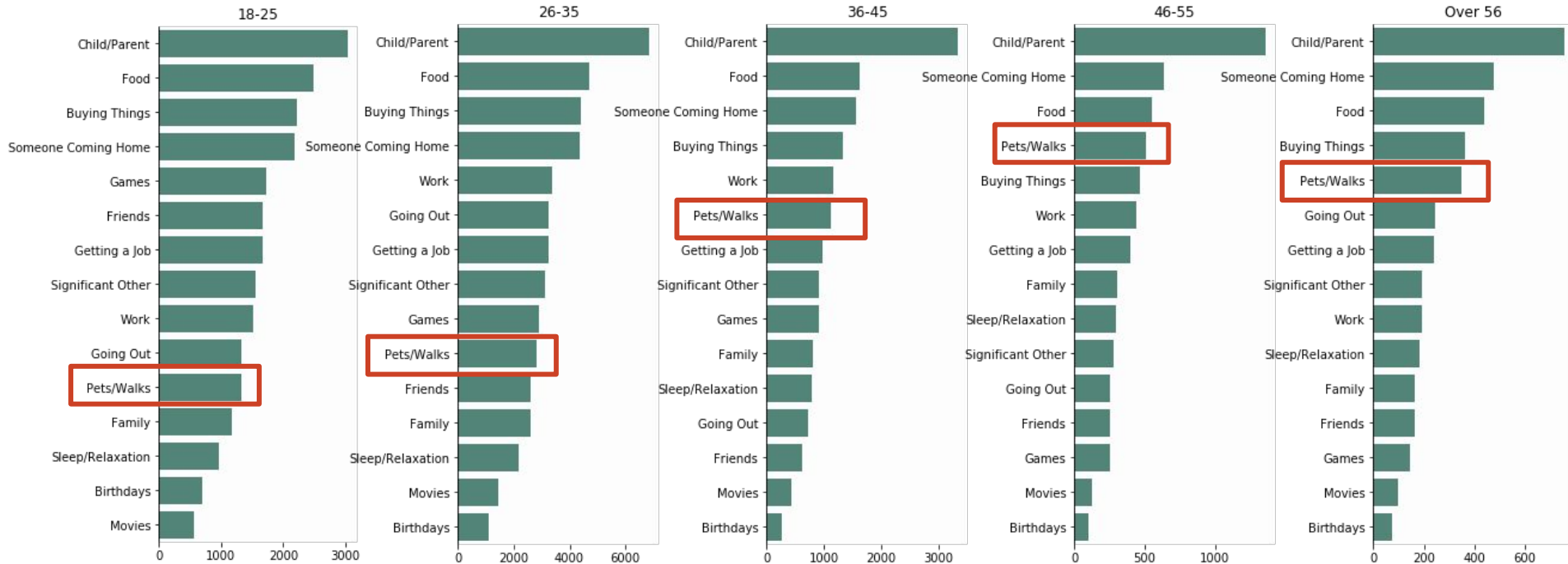




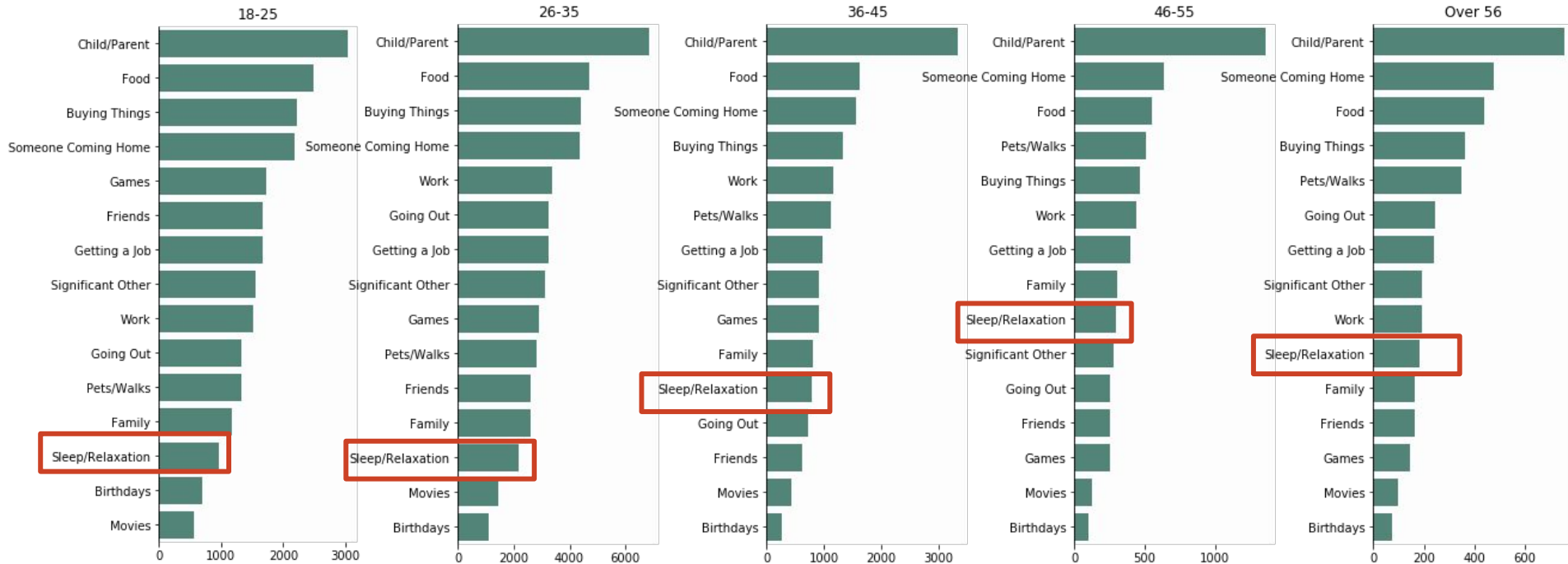
# Ages: Friends



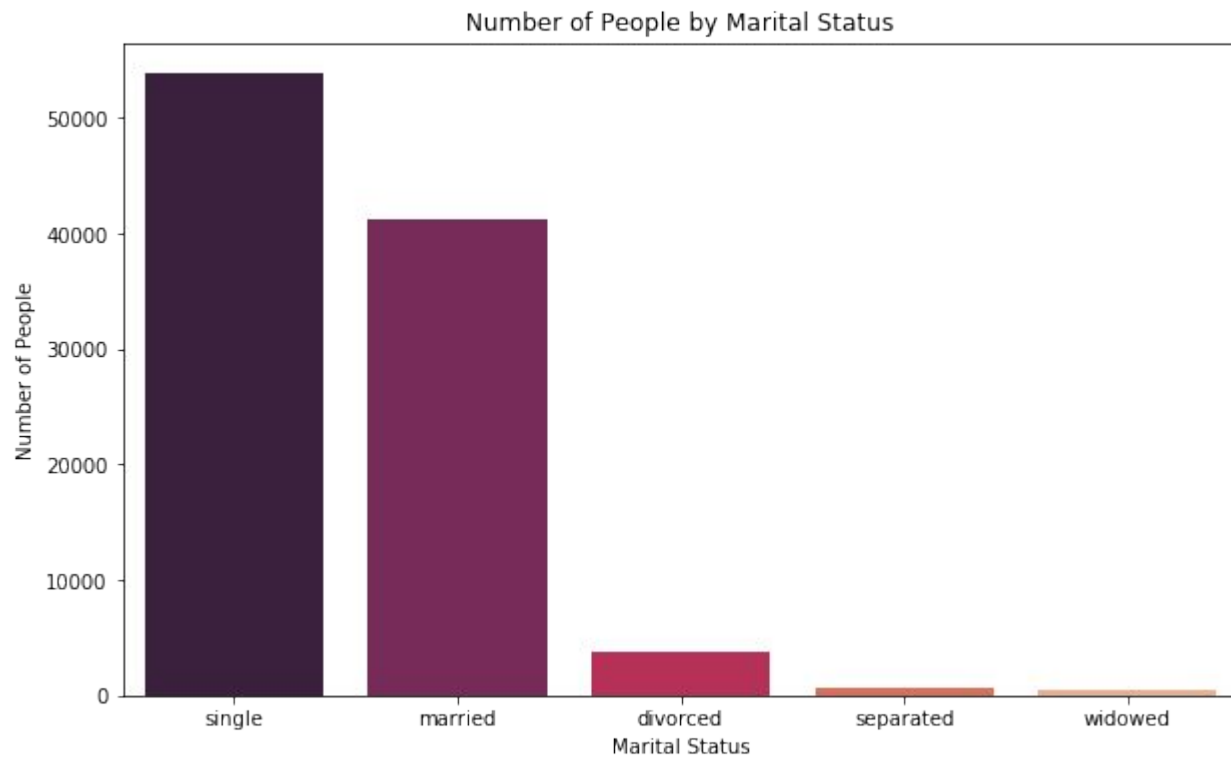
# Ages: Pets and Walks



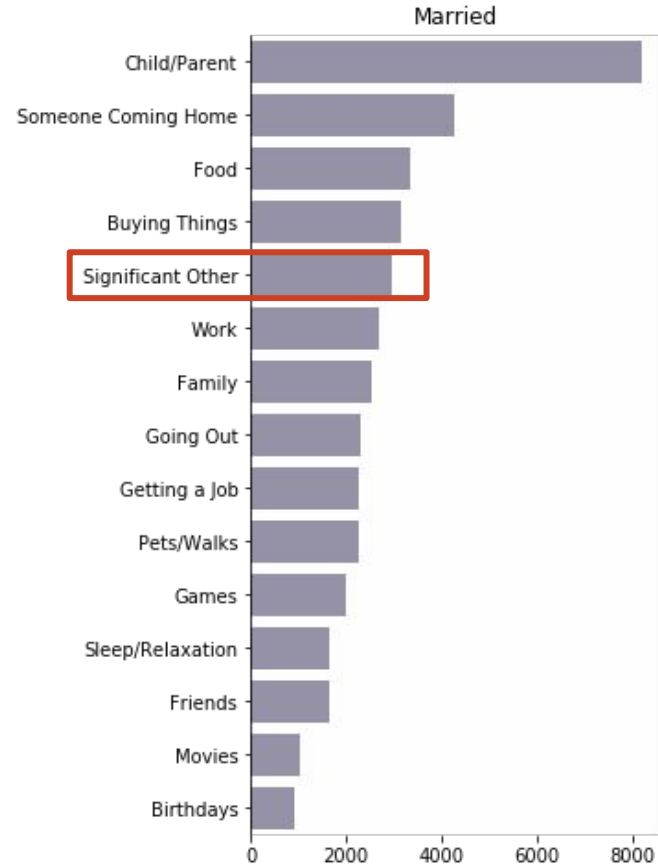
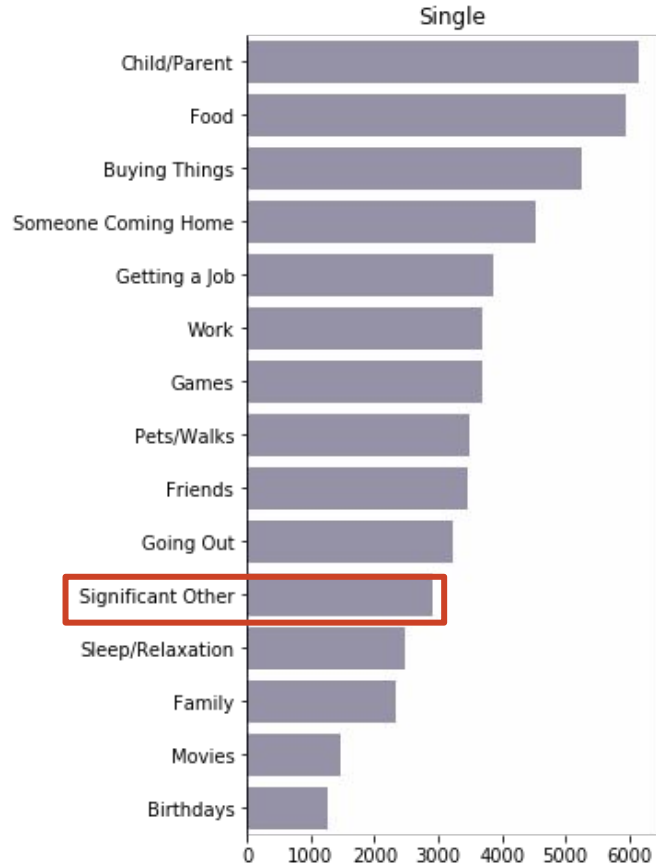
# Ages: Sleep



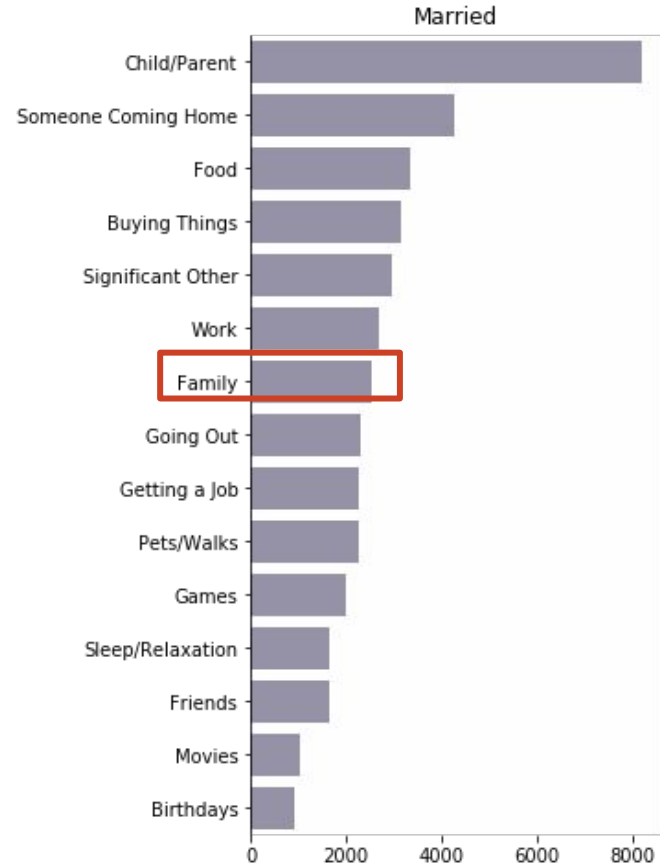
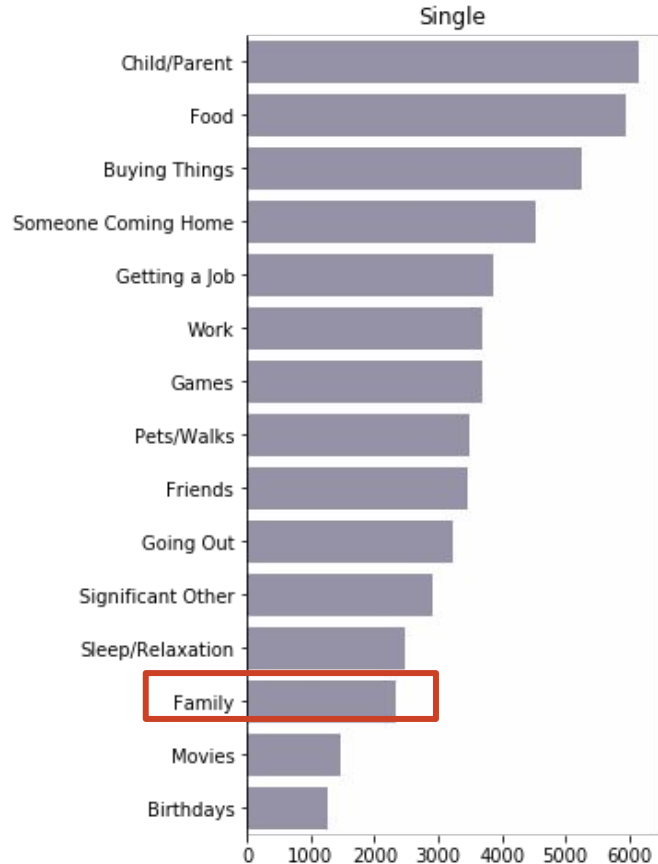
# Sources of Happiness by Marital Status



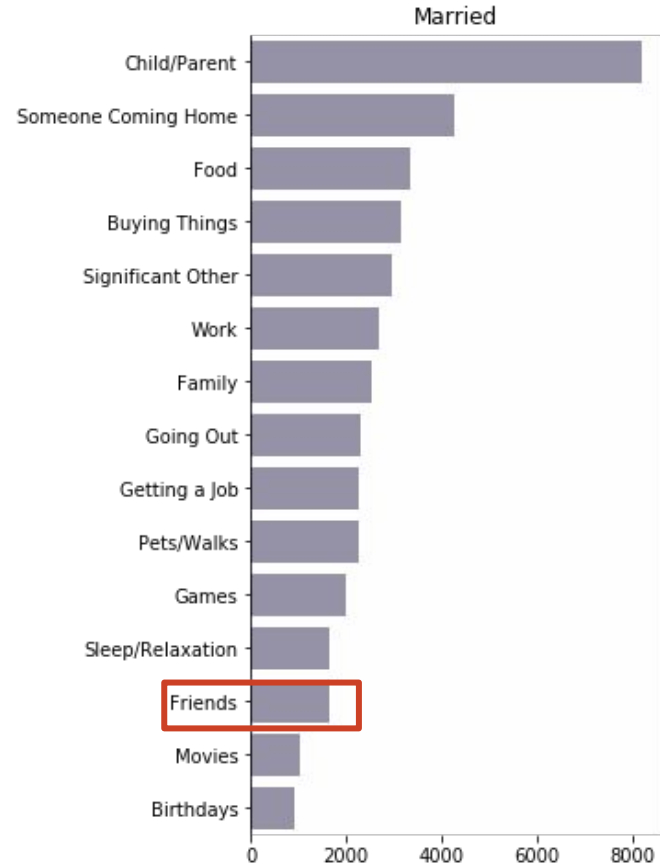
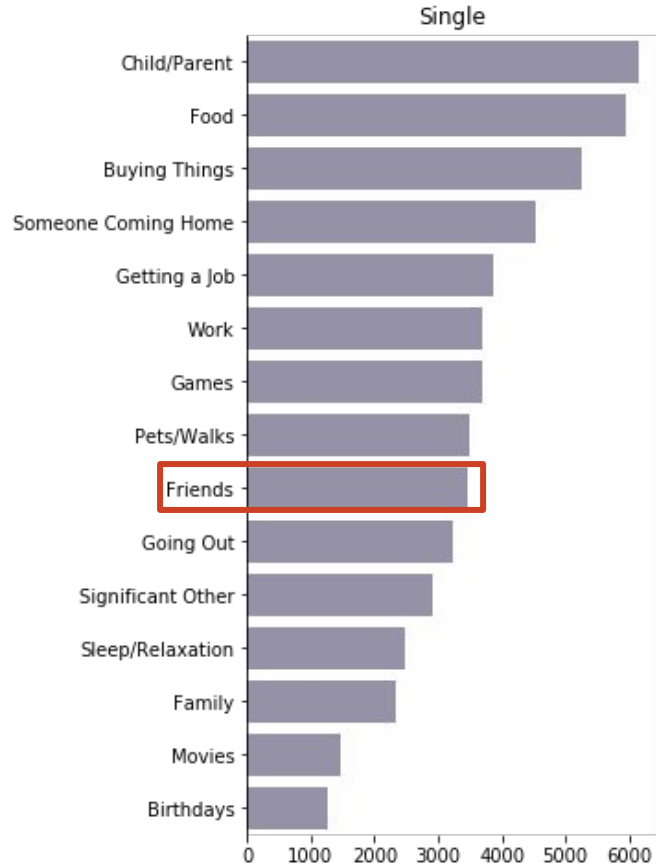
# Marriage: Significant Others



# Marriage: Family

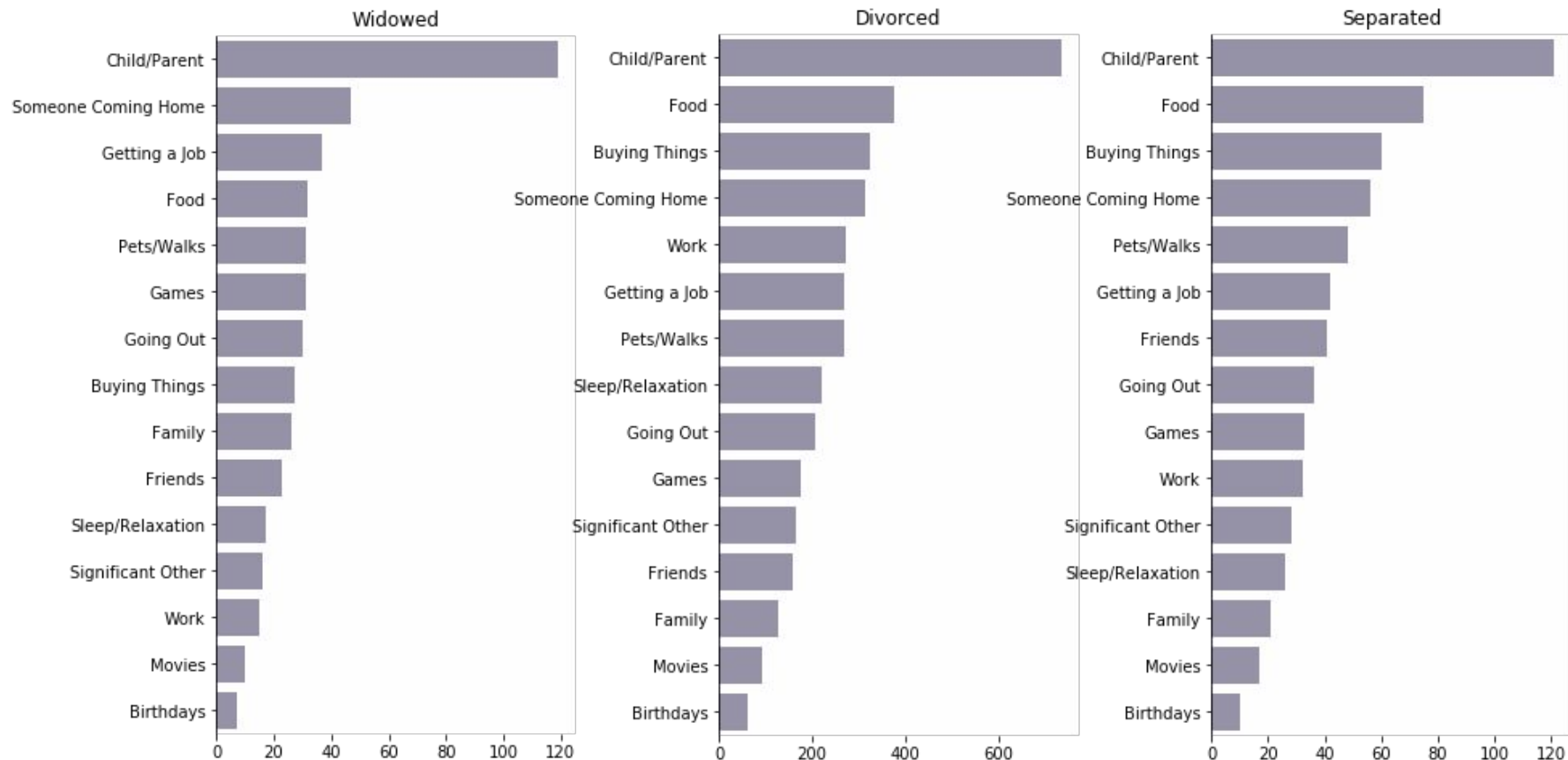


# Marriage: Friends

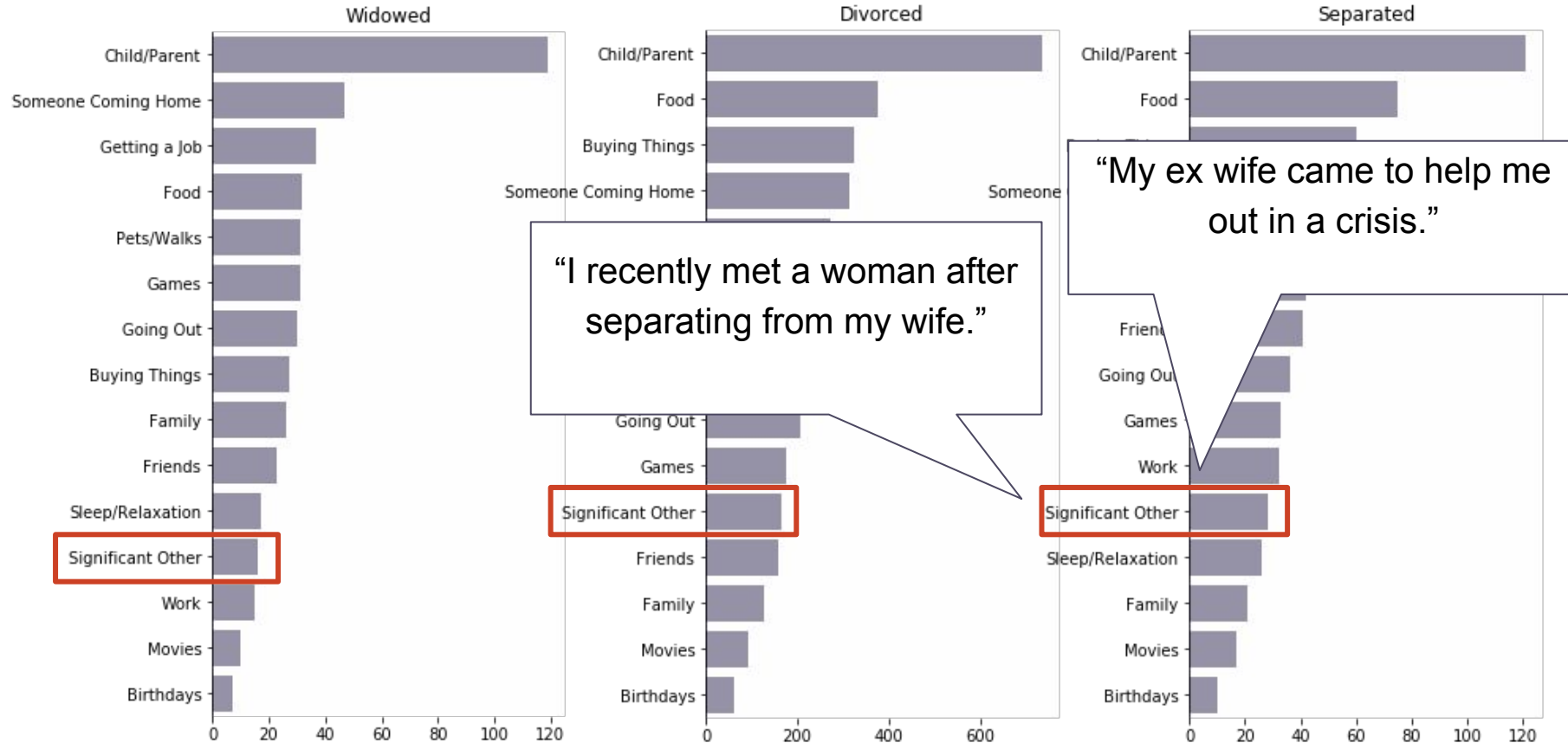




# Non-Marriage: Significant Other

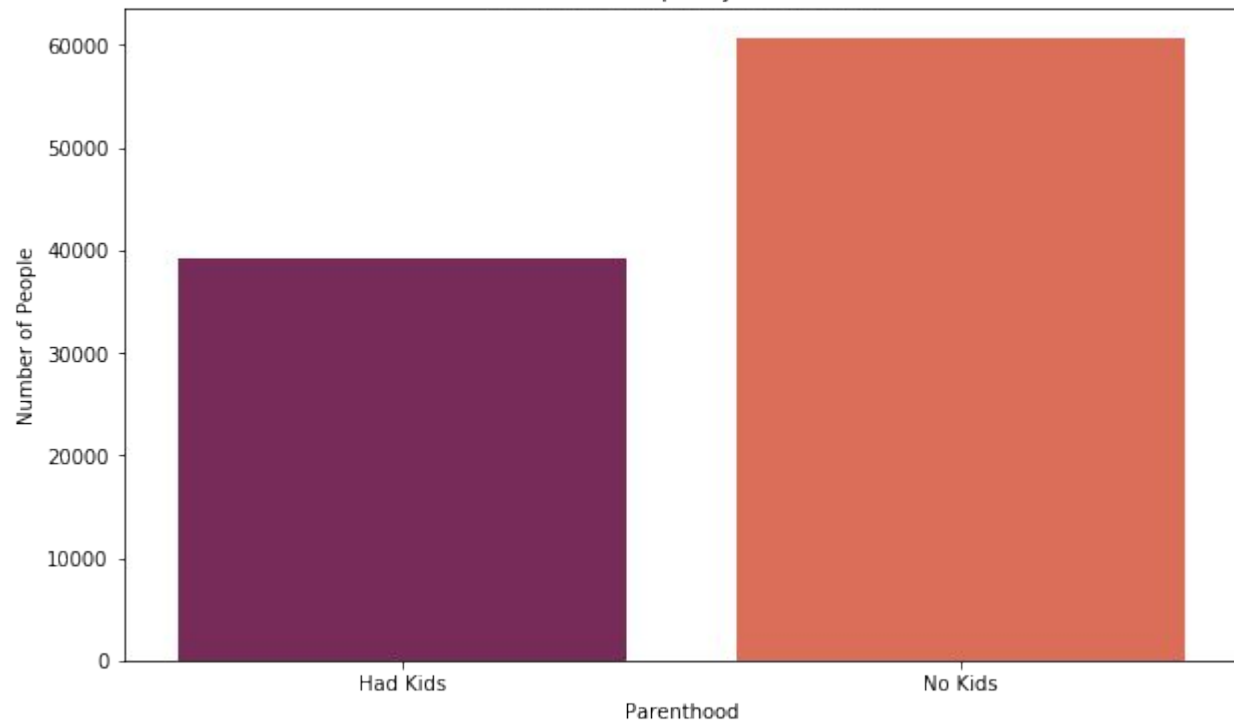


# Non-Marriage: Significant Other

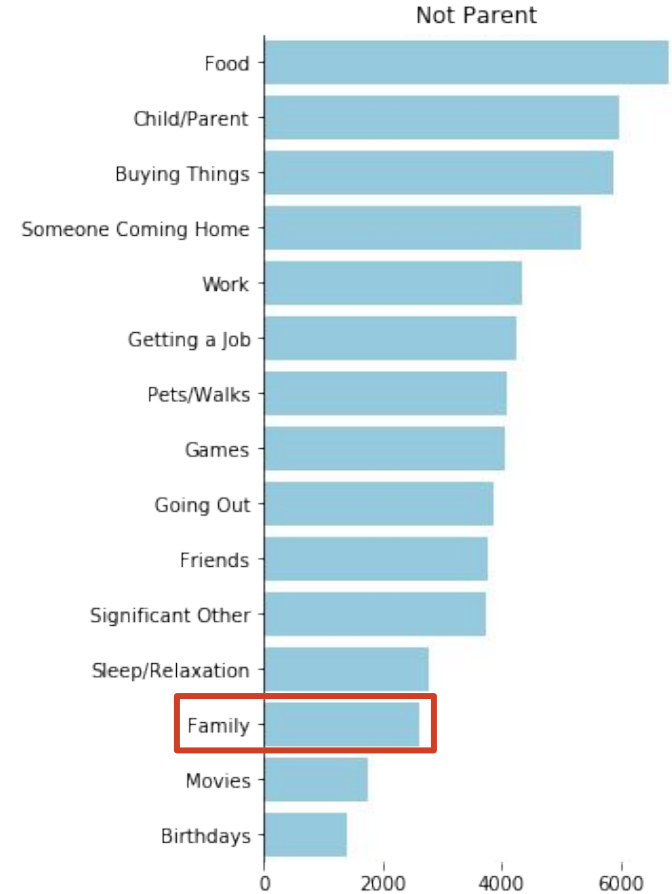
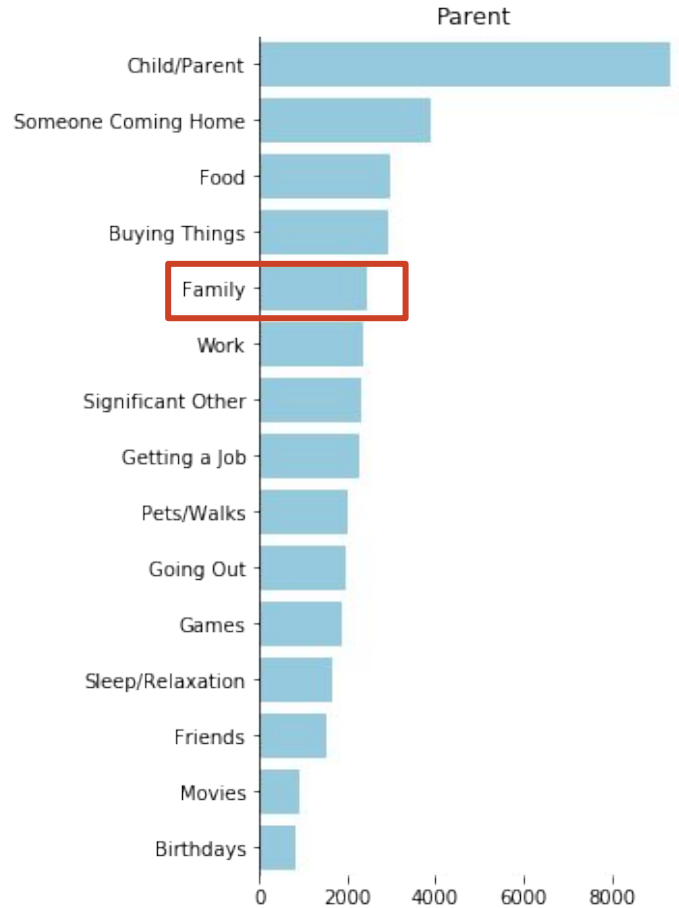


# Sources of Happiness by Parenthood

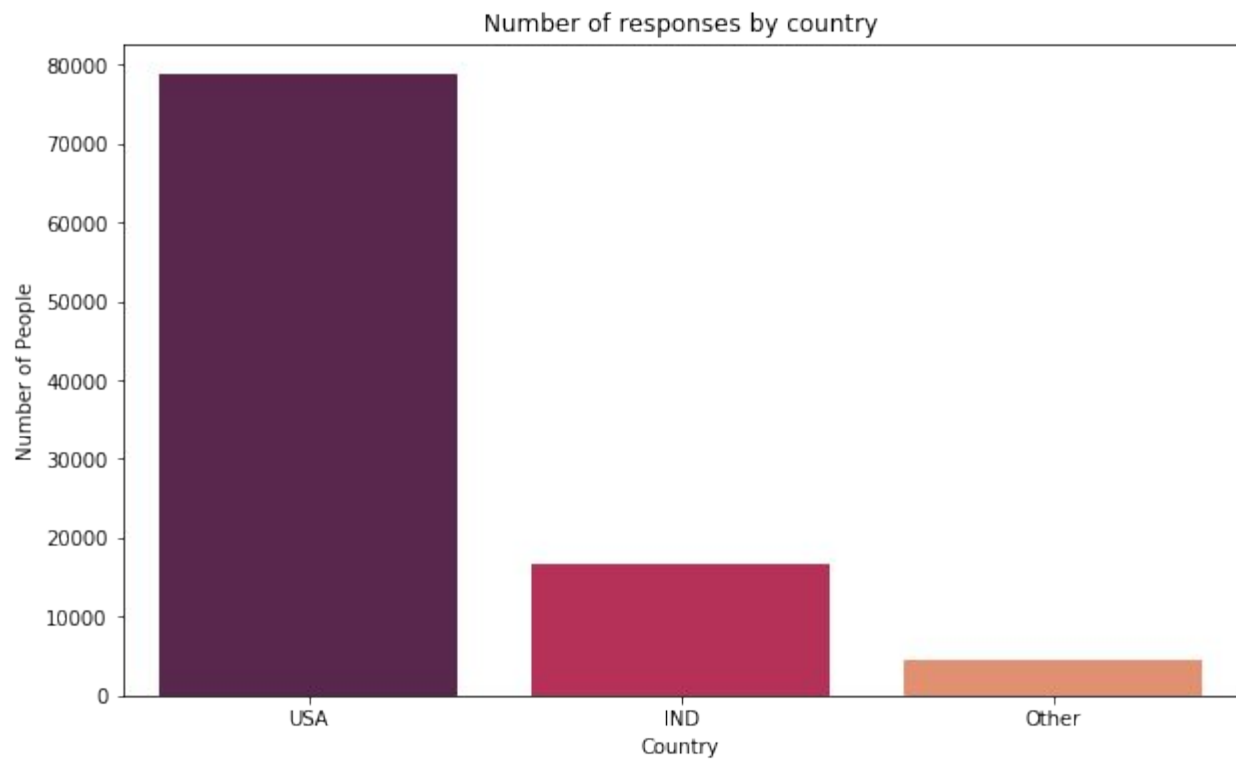
Number of People by Parenthood



# Parents vs Not Parents

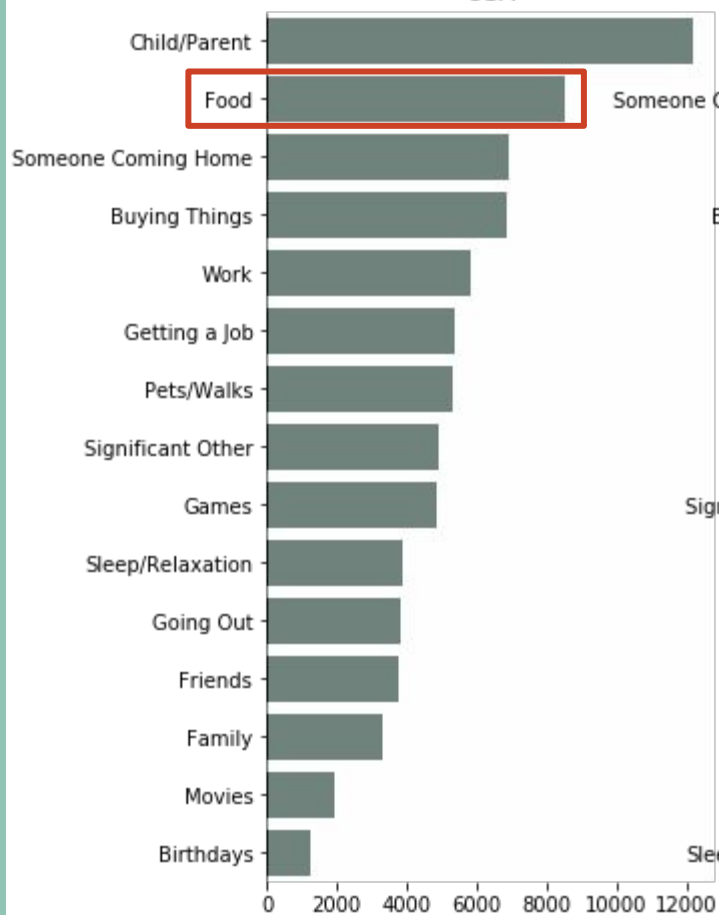


# Sources of Happiness by Country



# Countries

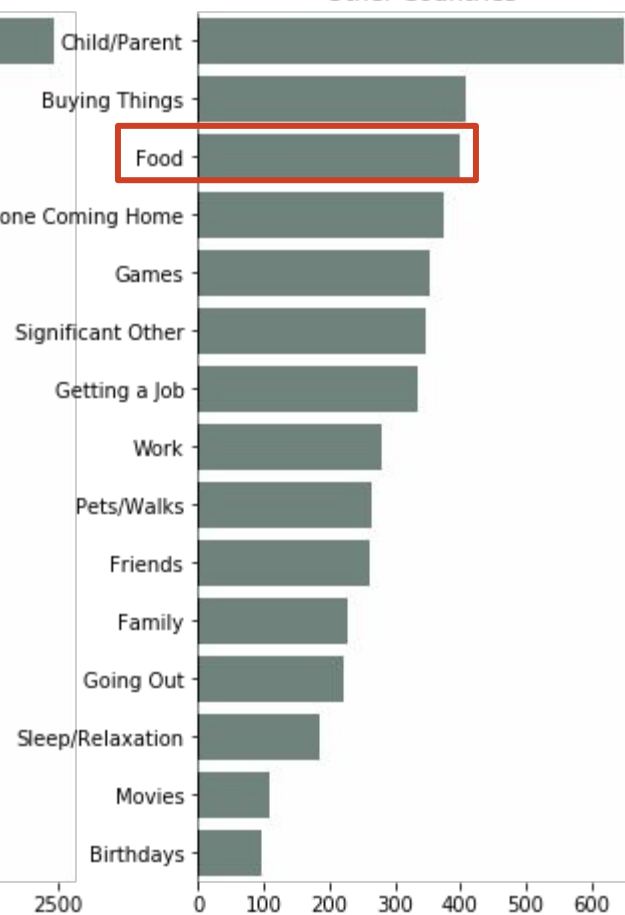
USA



India



Other Countries



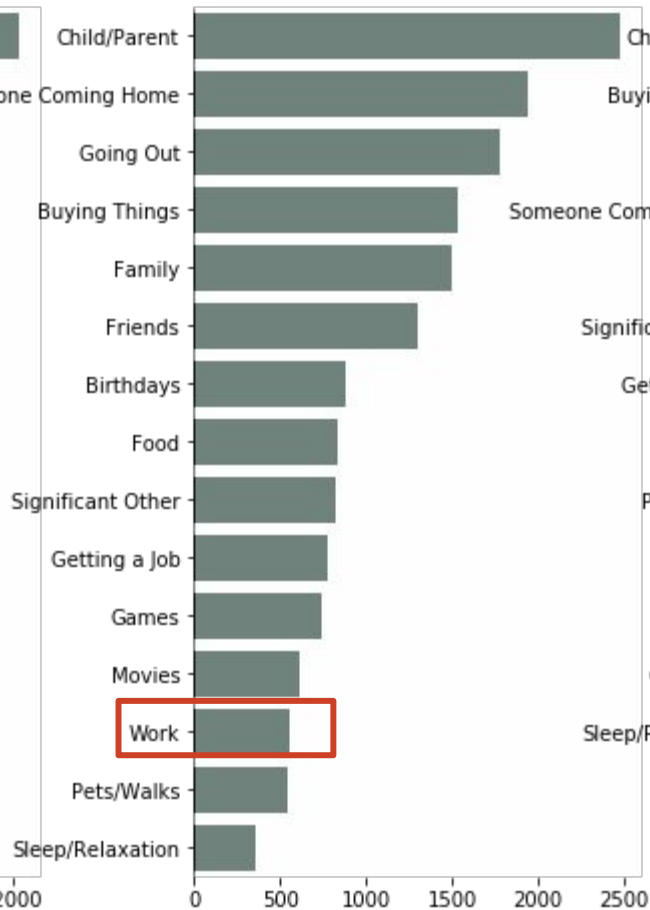


# Countries

USA



India

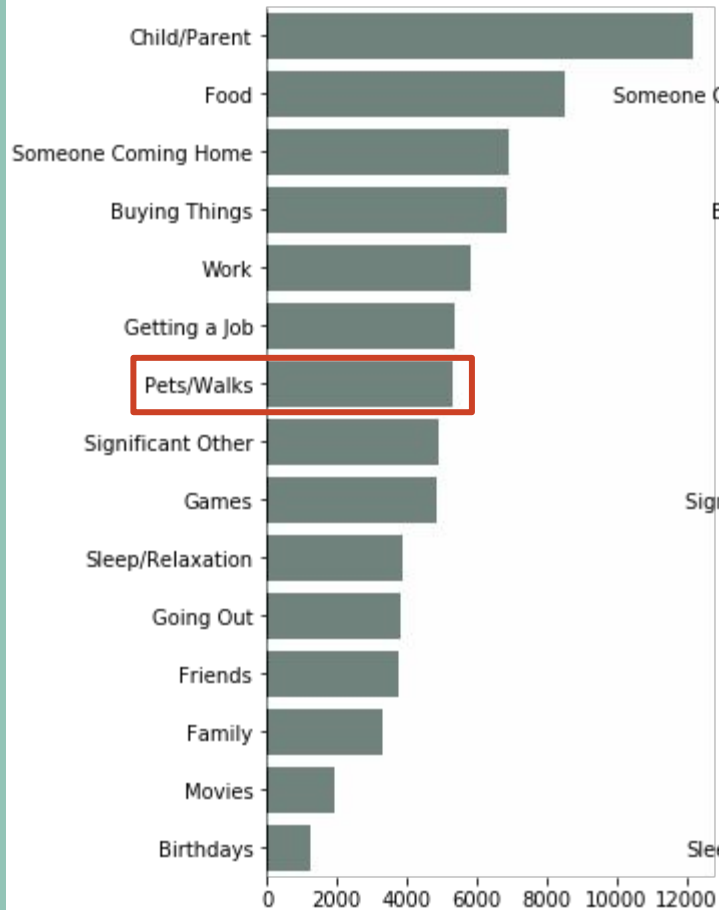


Other Countries

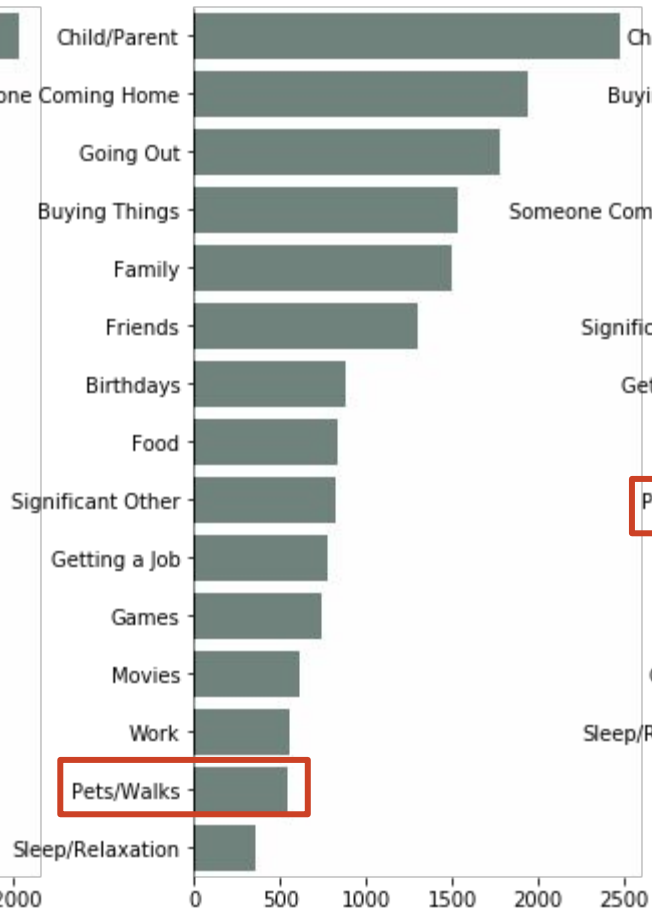


# Countries

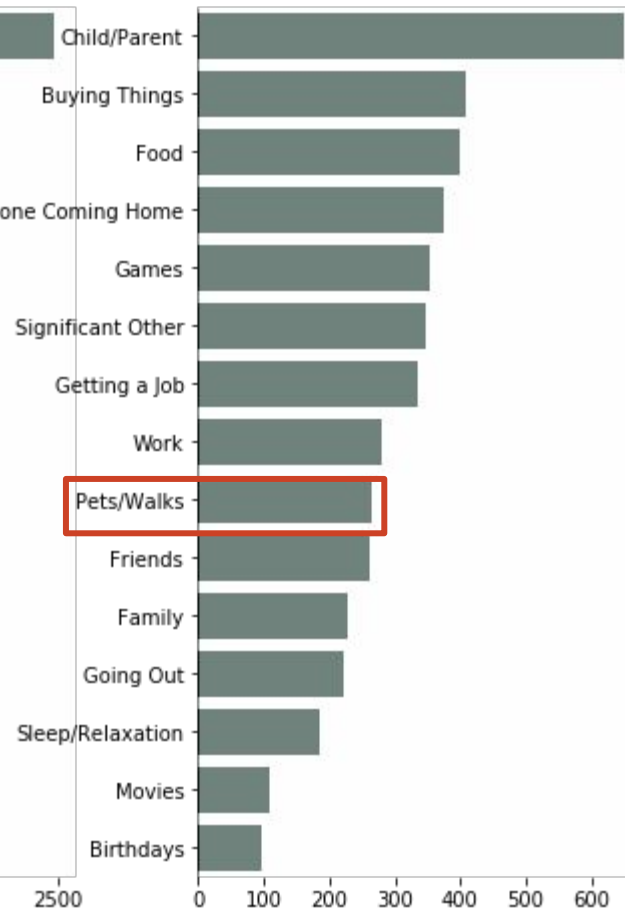
USA



India

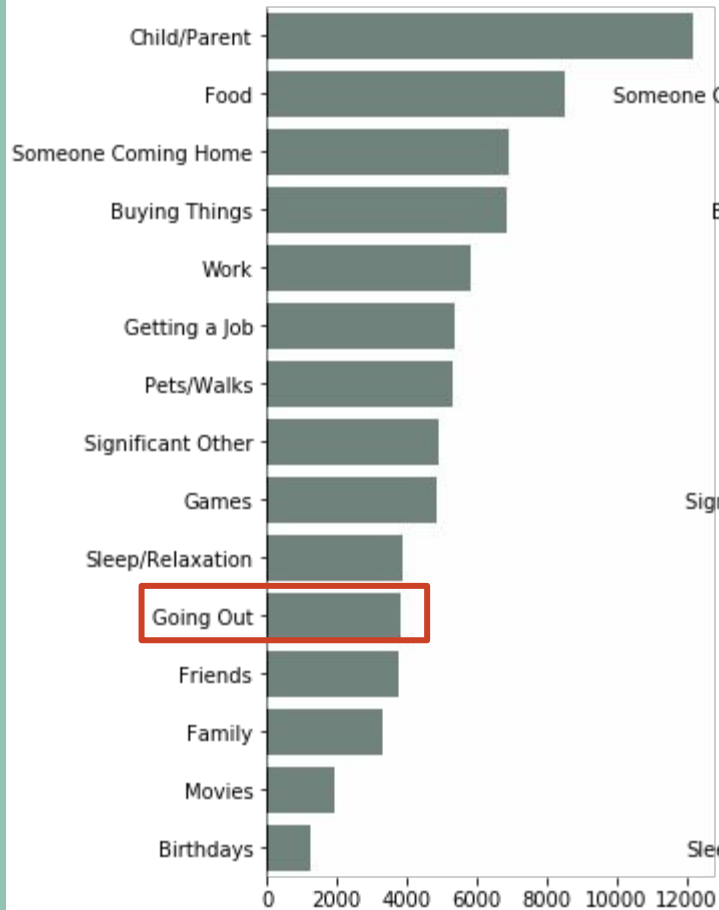


Other Countries

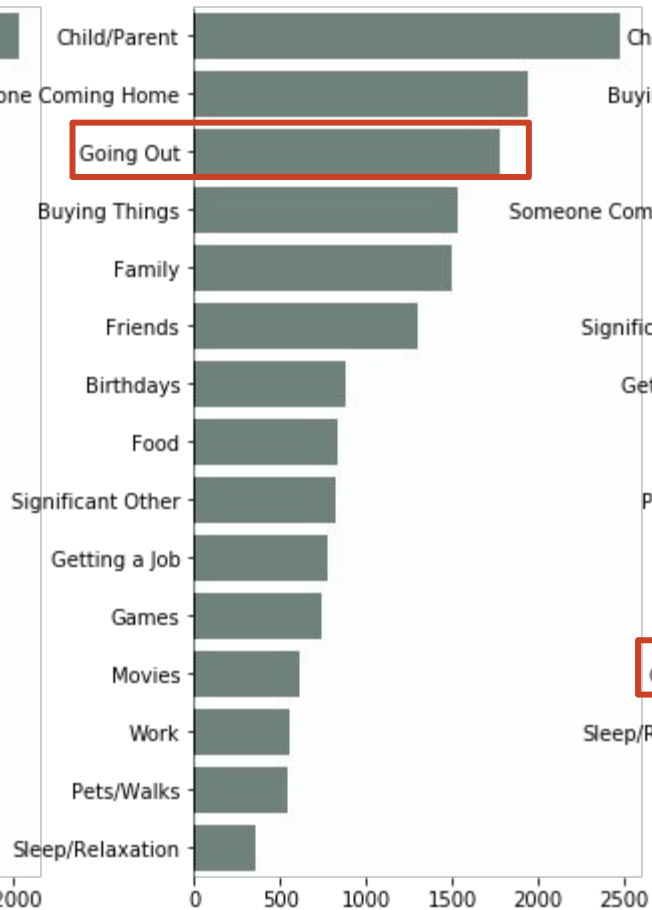


# Countries

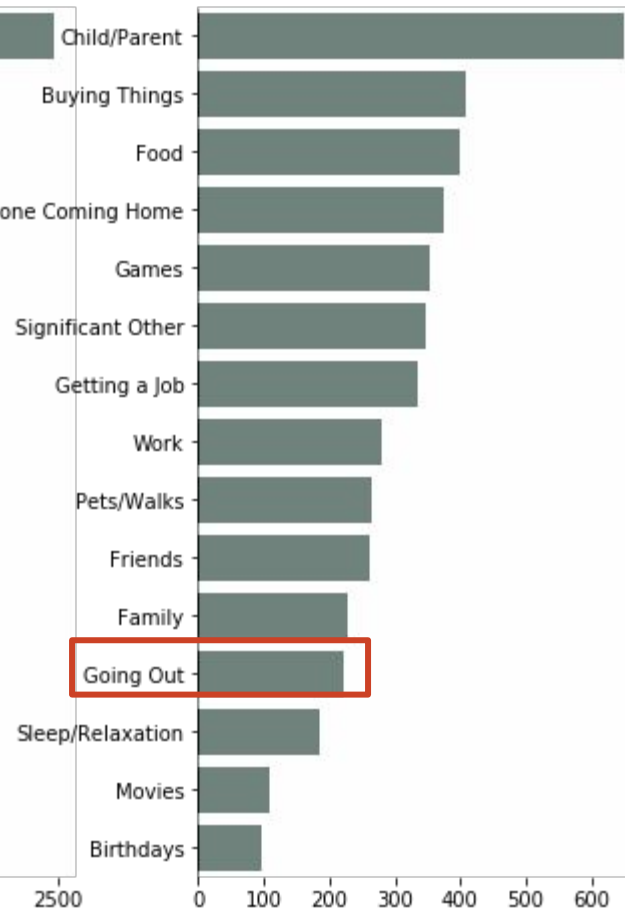
USA



India

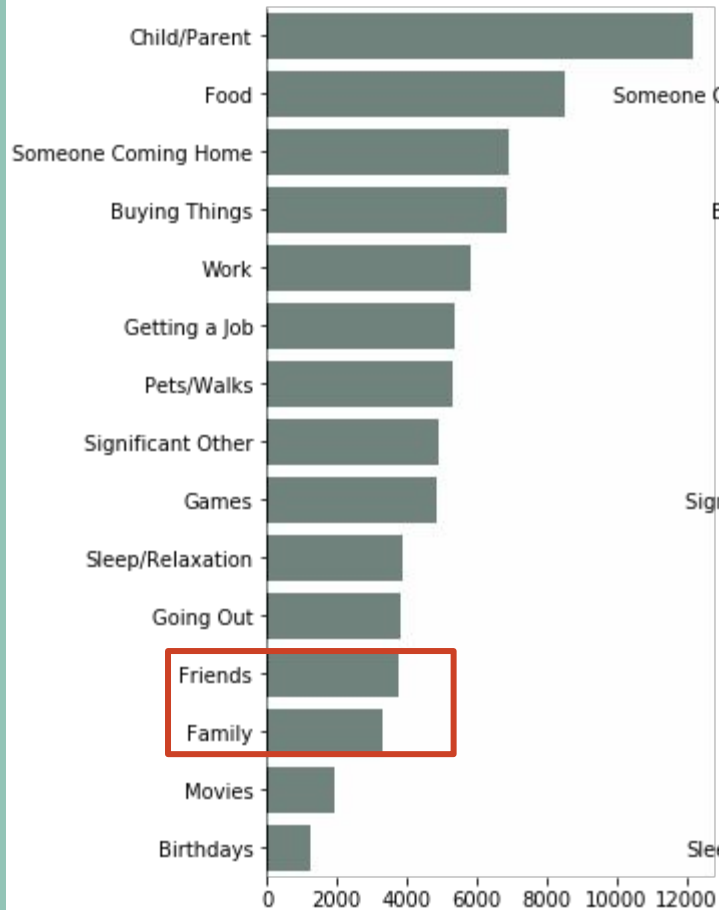


Other Countries

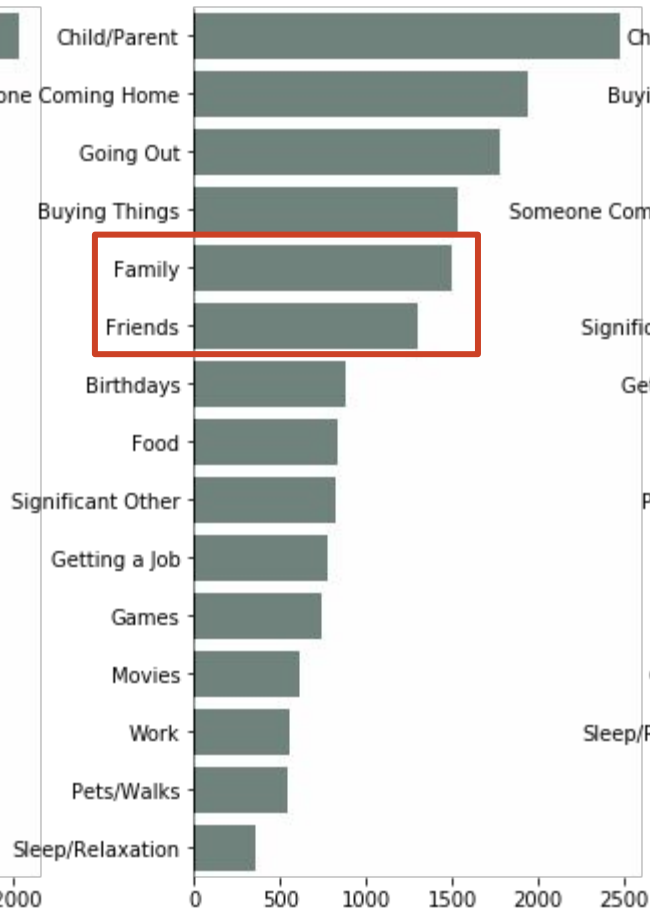


# Countries

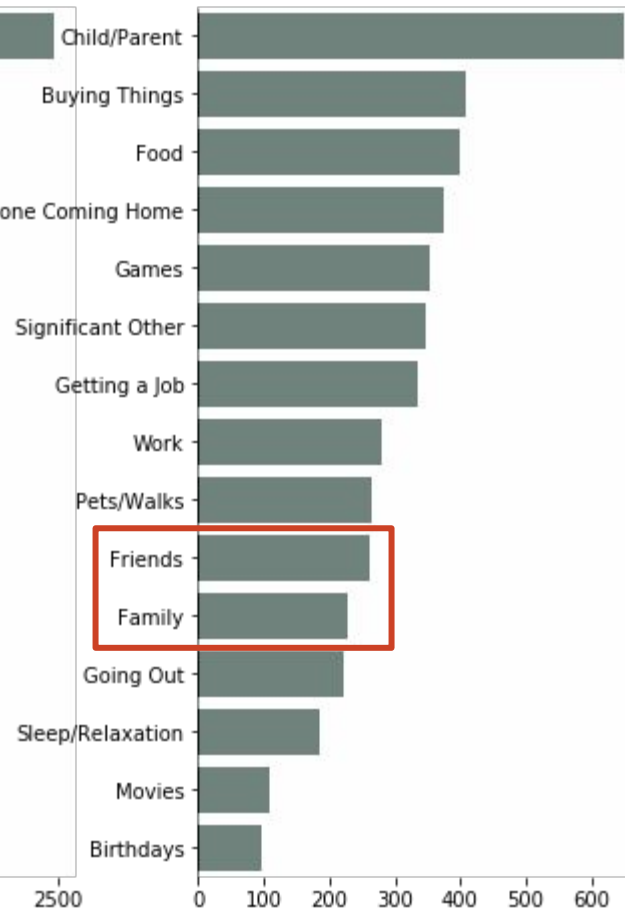
USA



India

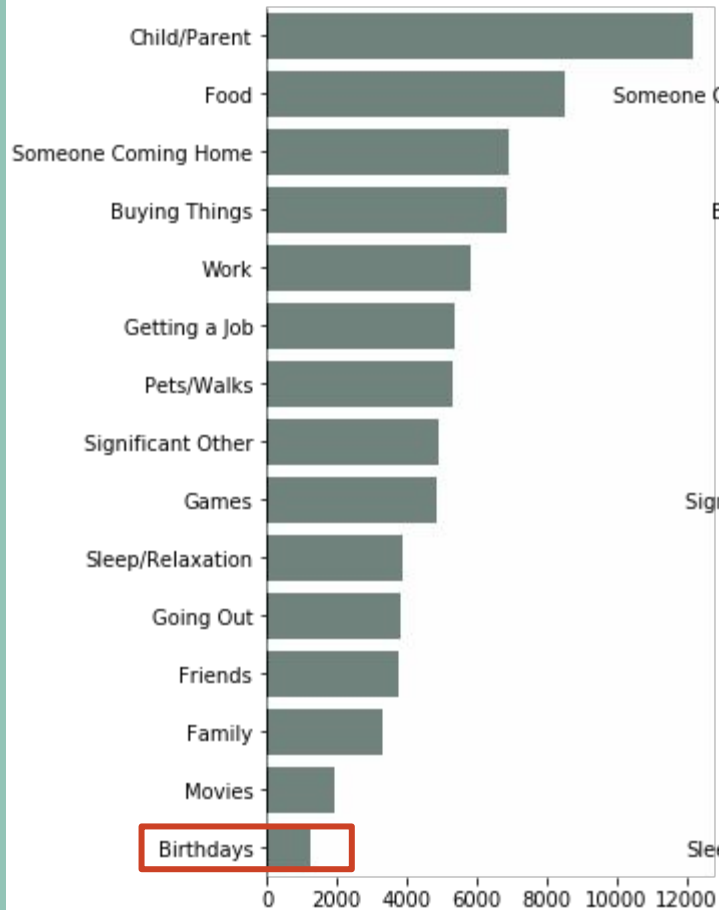


Other Countries

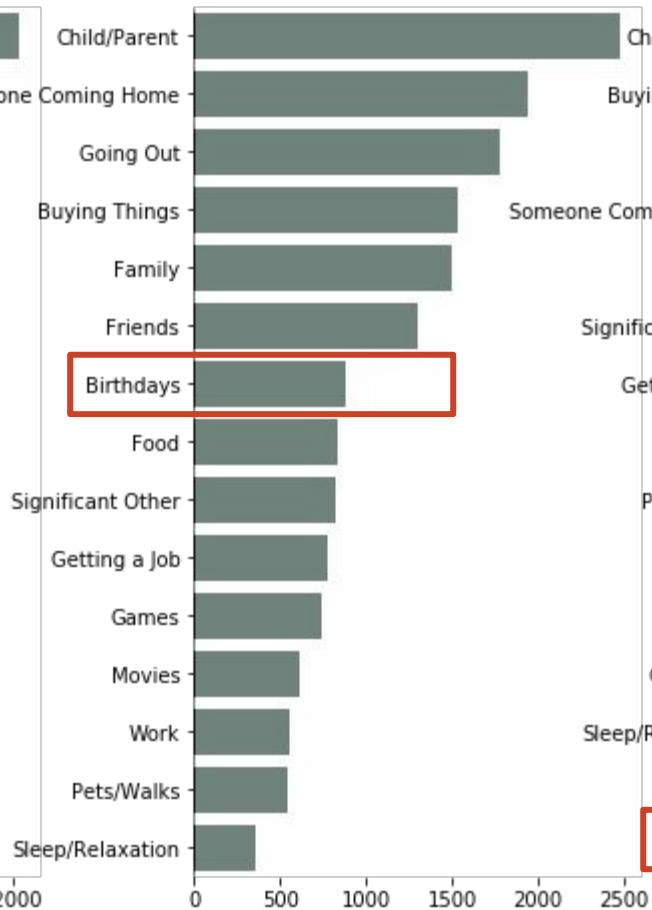


# Countries

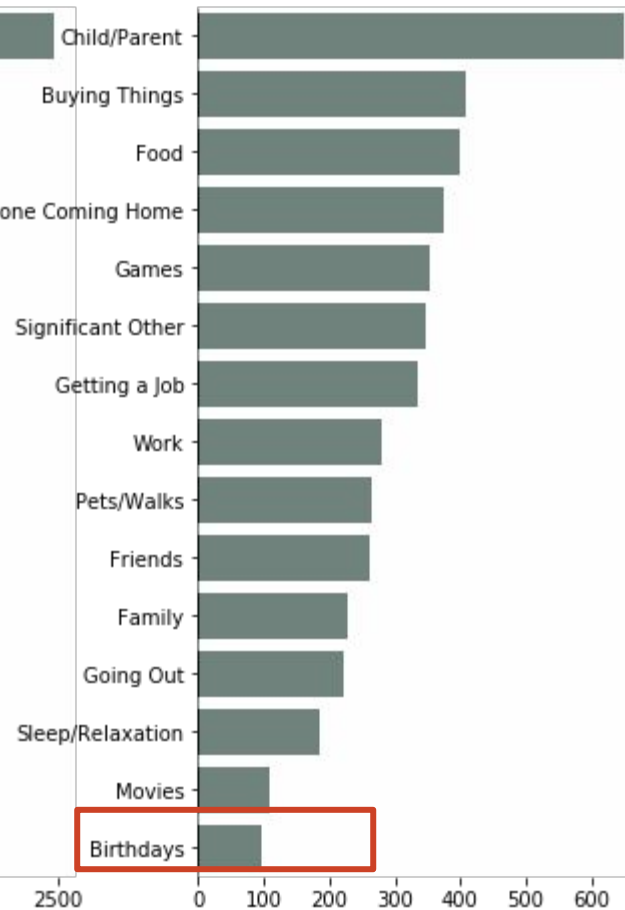
USA



India

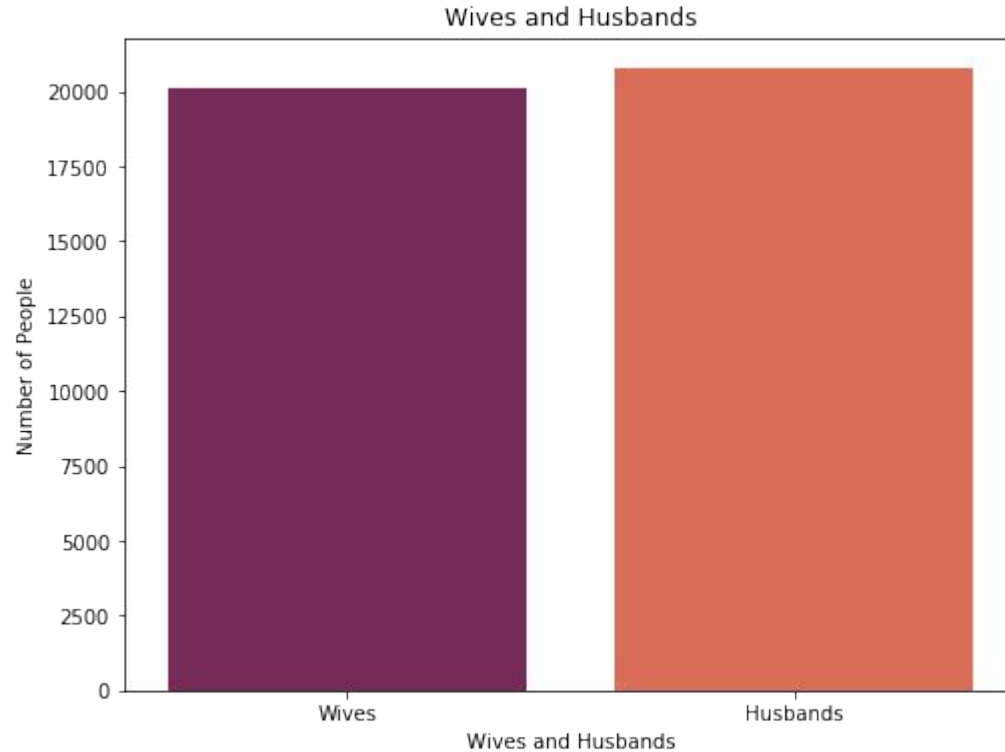


Other Countries

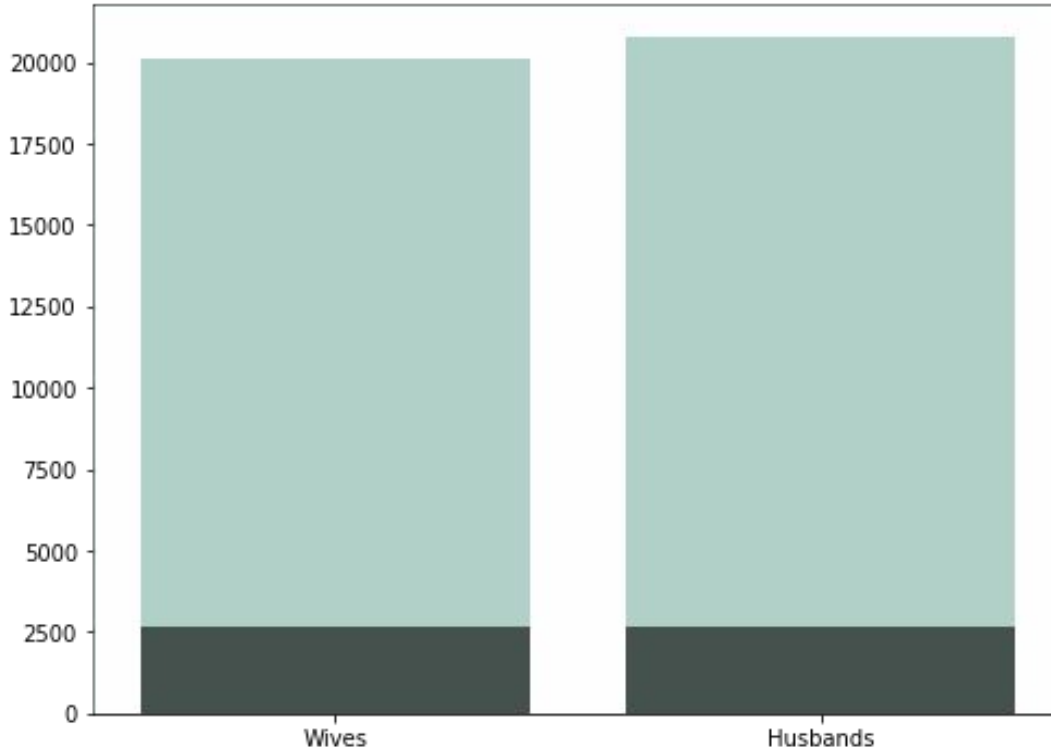


# Wives and Husbands: Extras

# Amount of Wives vs Husbands

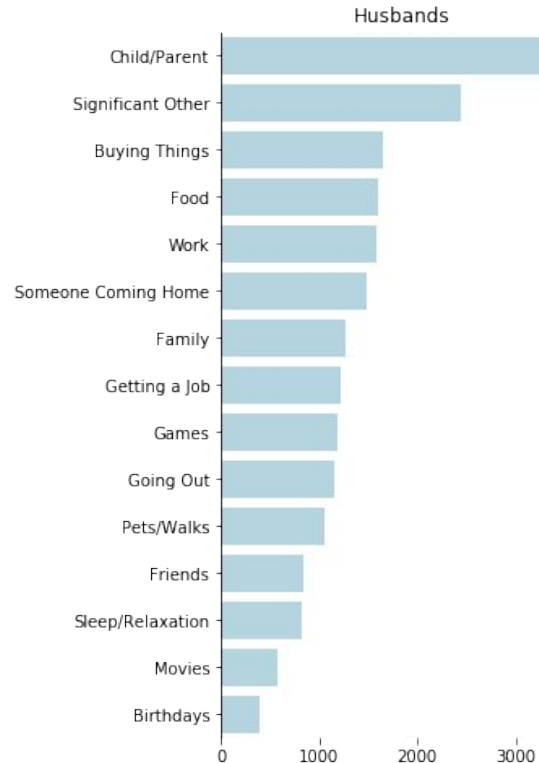
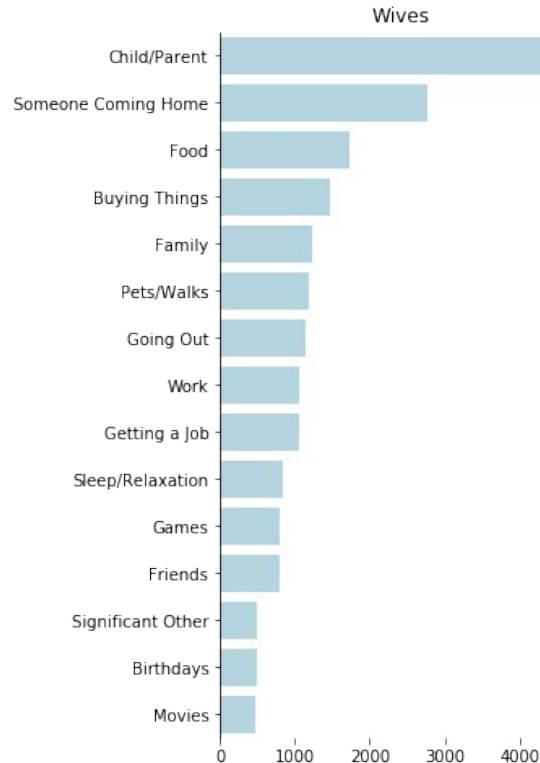


# How often wives/husbands mention one another



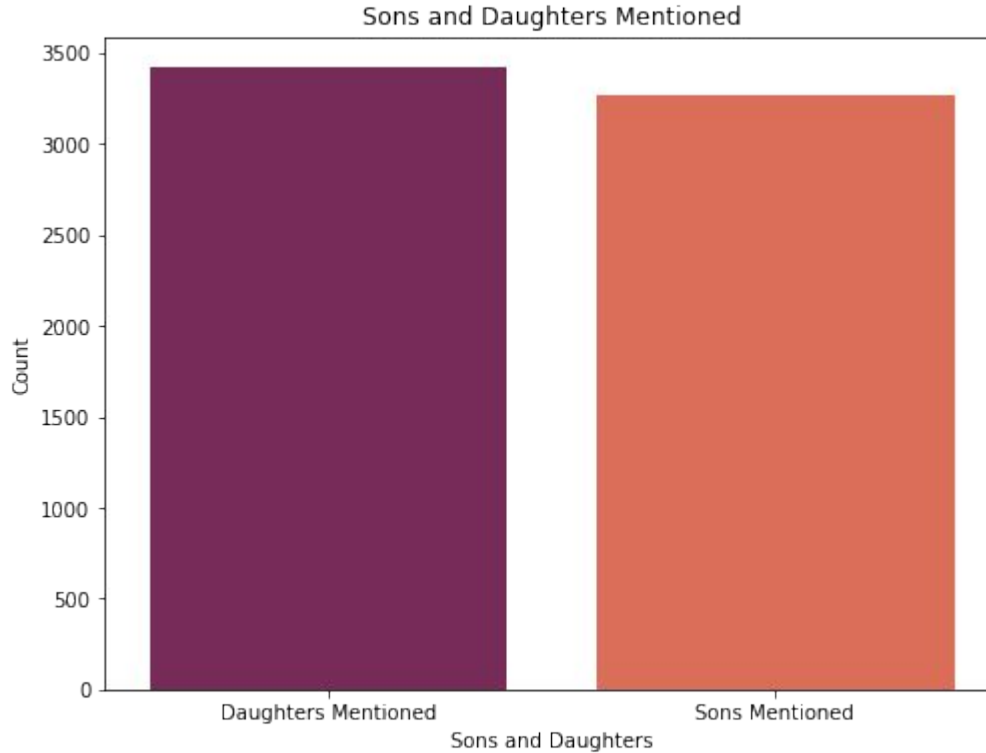


# What Makes Husbands vs Wives Happy

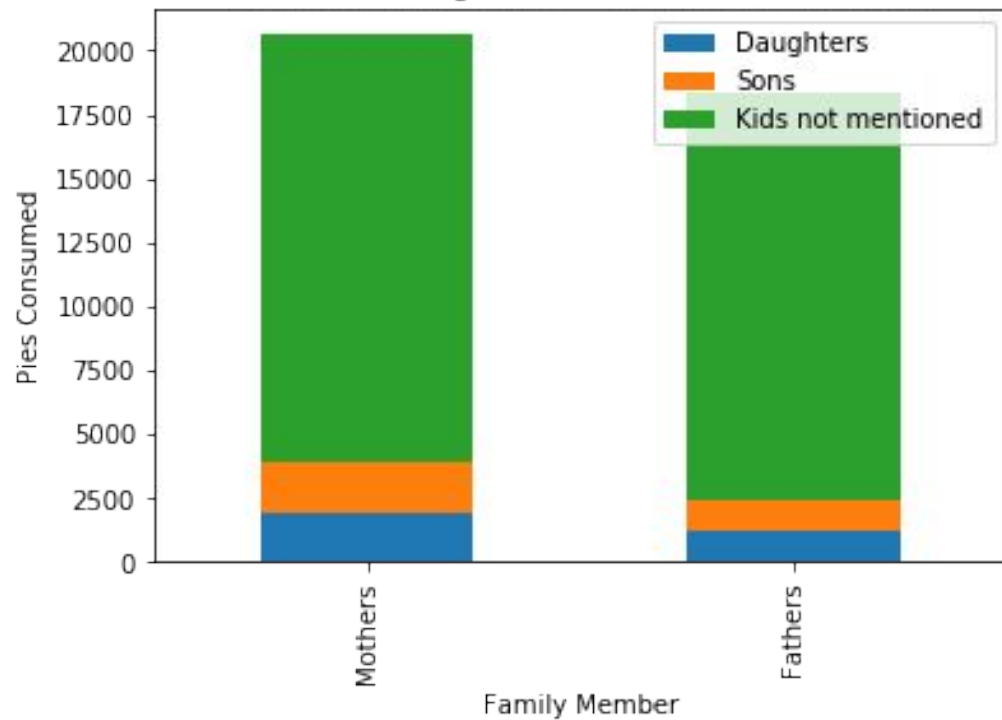


# Sons and Daughters: Extras

# How Often Sons and Daughters are Mentioned



How often daughters and sons are mentioned



year arrived blue custody wife pick  
surprised thoughtful dog proud just task  
visit split spontaneously text\_cleaned Name  
cooked called tell time bonus  
mother surgery Length brunc  
today bi anniversary son older daughter dinner went job  
graduation gift object took celebrating hug day boyfriend  
mail work doing mturk spite gown cap

